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ORIGINAL ARTICLES.

OBSERVATIONS ON TORTICOLLIS, WITH PARTICULAR REFERENCE TO THE SIGNIFICANCE OF THE SO-CALLED HEMATOMA OF THE STERNO-MASTOID MUSCLE.¹

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ASSUMING that the treatment of any affection must to a great extent depend upon our apprehension of the causes that produce it, I shall call your attention more particularly to etiology, the conclusions being influenced by clinical investigation rather than by recorded theories.

That the bearing of these conclusions on the question indicated by the title of this paper may be clearly understood, I quote from several of the more prominent writers on the subject. F. Busch,² for example, says: "Congenital wry-neck is caused, as Stromeyer was the first to show and as is now acknowledged, almost without exception by injury to the sterno-cleido-mastoid muscle at birth, and by subsequent shortening at the place of injury by scar-contraction. The deformity occurs almost exclusively in children delivered by forceps, or more frequently in breech or foot presentations."

In the *Deutsche Chirurgie*³ the subject is treated by Fisher as follows: "It is certain that tearing of muscle at birth, as Stromeyer has shown, is a frequent cause of torticollis. A tumor appears at the seat of the injury a few weeks after birth, which slowly disappears, leaving shortening by scar-contraction."

Volkman and Vollert⁴ have resected and examined portions of muscle in cases of supposed congenital torticollis. In some no change was apparent; in others the muscular substance had entirely disappeared to be replaced by fibrous tissue; while in the remainder the fibrous degeneration was diffuse, as shown by bands in the muscle substance. These changes they regard as the result of myositis caused by injury at birth. While these observations are of value as showing changes that may occur in persistent wry-neck, they can have but little bearing

on the question under consideration, as no evidence is presented of original injury or of subsequent induration, and because similar changes are found in cases of acquired torticollis of long duration, as reported by Robert, Marchessaux, Bouvier, and Witzel.⁵

It is evident that the term injury is not used by these and other writers in a general sense, but applies to partial rupture of the sterno-mastoid muscle—caused, it would appear, by torsion⁶ of the neck during delivery of the head, followed by effusion of blood,³ and later by an encapsulating inflammation⁴ at the seat of the injury, as shown by a hard, painless tumor in the substance of the muscle. This induration slowly disappears, to be replaced by fibrous tissue, which, contracting, creates permanent torticollis—in other words, a purely mechanical shortening, as distinct from the nerve irritation and spasm that we usually associate with wry-neck. As to the first part of this proposition—that injury of muscle may occur during labor, and that it is followed by induration at the seat of the rupture—there can be no doubt but that such rupture is followed by scar-contraction; that it is the usual cause of congenital torticollis is extremely improbable. A partial subcutaneous rupture of a normal muscle would seem to present every requisite for quick and perfect repair. Scar-contraction never follows similar injuries in later life, nor do we find in other situations anything analogous after injury at birth. If, then, we are to accept this theory, it would seem that the supporting evidence should be very direct and conclusive, such as the recorded observations of a number of cases—from the original injury, with its succeeding induration and scar-contraction, to the persistent torticollis which is supposed to result. Such evidence, however, is not contained in the literature of the subject, although the theory—originating fifty years ago with Stromeyer³ and Dieffenbach—has been endorsed by nearly⁶ all subsequent writers, gathering weight, it would appear, by reiteration, rather than from actual investigation. It should be stated that this theory of the origin of congenital torticollis has been vigorously com-

¹ *Deutsche Archiv f. Chir.*, 1882, p. 181.

² Küstner: *Centralbl. f. Gyn.*, No. 9, 1886.

³ Bouchut: *Traité prat. de Mal. de Nouv.-nées*, Paris, 1875.

⁴ Skrzeczka: *Vierteljahrsschrift f. Gyn. u. obst. Med.*, 1869, S. 129. Hüttenbrenner: *Lehrb. f. Kinderheilk.*, 1886.

⁵ *Handb. d. Chir.*, Bd. ii. S. 426.

⁶ *Rust's Handb. d. Chir.*, S. 625.

¹ Read at the meeting of the American Orthopedic Association in Washington, September, 1891.

² Von Ziemssen's *Handb. der allg. Ther.*

³ *Bd. xxxiv. S. 32.*

⁴ *Centralbl. f. Chir.*, No. 14, 1885, No. 38, 1890.

bated by Peterson¹ and flatly denied by Weiss,² as follows: "Ruptures of the sterno-mastoid muscles are frequent enough during labor, but they are never followed by torticollis, and it is impossible to accept the theory advanced by Stromeyer and Dieffenbach."

It is apparent that we may obtain reliable evidence on this question from two sources: cases of induration followed to their termination, and cases of supposed congenital torticollis traced back to injury and subsequent induration, if such existed.

In the records of the Hospital for Ruptured and Crippled were found eighteen cases of so-called hematomas; nine could be traced, and of these two were excluded for mistaken diagnosis—the first because the after-history seemed to point to an inflamed gland as the cause of the induration; the second because the mother is positive that no tumor was present at any time. In both instances the torticollis, that was the prominent symptom, quickly and permanently disappeared. The history and results in the remaining cases are as follows:

CASE I.—A male infant brought to the hospital on August 26, 1889, at the age of two months. Fifth child, delivered by version, arm broken in the act. Three preceding children had died during labor. Tumor, size of a hazel-nut, in the middle of the right sterno-mastoid, hard, not sensitive; noticed by the mother at six weeks; no torticollis; no symptoms. The infant died eighteen days after.

CASE II.—Male, brought on August 16, 1889, at the age of three weeks. First child; delivered by forceps, after tedious labor. Tumor, size of a large almond, in the left sterno-mastoid muscle; not sensitive to pressure; noticed at ten days. No torticollis; no symptoms. The swelling disappeared in three months. Child examined at nineteen months; no trace.

CASE III.—Male, seen August 28, 1890, at the age of five weeks. First child; forceps delivery after difficult labor. Tumor, size of a small pigeon's egg, in the middle of the left sterno-mastoid; noticed at three weeks. No torticollis or other symptoms. The swelling disappeared in three months. Examined at the age of nine months; no trace remaining.

CASE IV.—Female, brought September 16, 1890, at eleven weeks. First child; breech presentation. Delivered by a midwife with some difficulty. Tumor in the middle of the right sterno-mastoid, size of a hazel-nut; noticed at eight weeks. No torticollis. The induration disappeared in four months. Examined at eight months; no trace.

CASE V.—Male, seen May 2, 1891, at two months. Breech presentation, spontaneous and easy labor. Tumor size of a hazel-nut in the upper third of the right sterno-mastoid; noticed at three weeks. A gurgling respiration was apparent when the child nursed the left breast. There was no torticollis,

though slight resistance on extreme tension of the affected side.

Examined at the age of six months. No torticollis or restriction of motion. No symptoms. Tumor slightly smaller, otherwise unchanged.

CASE VI.—Male, brought July 31, 1891, at seven weeks. Third child, transverse with arm presentation, delivered by version and forceps. Complete paralysis of the right brachial plexus; right inguinal hernia. A spindle-shaped enlargement of the middle third of the right sterno-mastoid, one-half inch in diameter, hard, not sensitive. No torticollis. No symptoms. Last seen September 5, 1891. No apparent change in the tumor.

CASE VII.—Male, seen August 5, 1891, at five weeks. First child; breech presentation, difficult labor. Tumor size of a pigeon's egg, at sternal insertion of the right sterno-mastoid; hard, not sensitive to pressure. No torticollis or other symptoms. Not again examined.

With these I now include six cases recently reported by Quisling,¹ in which the indications correspond to my own, although the actual results were not in all instances ascertained. Thus, of the thirteen cases, nine were originally breech presentations or delivered by version, two were extracted by forceps, and in two there is no history of interference with delivery. Of these cases, examined with especial reference to the subject of torticollis, in none was it present at the first examination, other than the slight limitation that might be supposed to follow a tumor of this size and character in the muscle substance, and in none of the cases traced did it follow. It should be noted, also, that there are on record other instances of complete disappearance of these tumors without succeeding deformity, as for example, cases reported by Brooks,² by Smith,³ by Jacobi,⁴ and many others.

Having considered the question from the standpoint of original injury, traced to recovery in all the cases cited, we may now invert the method and examine the evidence presented by cases of congenital torticollis pointing to injury at birth as the exciting cause.

At best, such evidence is unsatisfactory, because we must depend upon the mother's statement as to the time when the affection appeared. Infants do not support the head for several weeks after birth, and unless the deformity is extreme it is not noticed until that time. If, then, an infant is brought for examination at the age of six months with a history of torticollis first noticed at four weeks, we may consider it of intra-uterine origin, or that it was acquired during the first month of life, or caused by injury at birth. If we favor the first conclusion,

¹ Archiv. f. Kinderheilk., Bd. xii. H. 5, 6, 1891.

² N. Y. Med. Record, February 27, 1886.

³ Trans. Lond. Path. Society, iv. p. 70.

⁴ Archives of Pediatrics, March, 1888.

¹ Archiv. f. Chir., Bd. xxx.; Centralbl. f. Gyn., No. 48, 1886.

² Nouv. Dict. de Méd. et de Chir.

then congenital torticollis must be divided into two classes.

First, cases of slight deformity, with no pain and but little spasm, except on extreme tension of the contracted parts, the contraction not being limited to the sterno-mastoid, but all the lateral tissues being involved. The resistance is not marked and the deformity can be easily overcome in a short time by stretching and manipulation. These cases are very similar to the mild condition of talipes calcaneus or of incomplete extension of arms or legs, equally amenable to treatment, whose origin would seem to be a constrained position *in utero*, leading to general shortening of tissues on the one aspect, with weakening and lengthening on the opposing surface.

The second class is composed of cases where the deformity is more marked. It cannot be overcome by simple means, but persists and increases. The sterno-mastoid may alone be affected, or the posterior group of muscles, with compensatory curvature of the spine and displacement of the scapula, as in one case now under observation. Here, we may infer, there is an actual arrest of development or muscle-degeneration, arising, it may be, from causes more complex than appear in the preceding cases.¹

In regard to rupture of muscle as a possible cause, it may be said that the tumor of true hematoma is so prominent when the child turns the head, that it could hardly escape the mother's notice, and her statement in this regard may be accepted as final. During the past six months I have had the opportunity of examining four cases of congenital torticollis in young infants, three of the first class and one of the second. Although there was a history of transverse presentation in one of the milder cases, in none of these, nor in those seen in later life, was there history or evidence of hematoma or of difficulty in delivery or probability of injury at birth.

In considering the significance of hematoma, so called, several sources of error should be indicated, as leading to the present confusion on this subject:

1. A muscle shortened *in utero* may be ruptured at birth, thus presenting a deformity where the induration is a coincidence and not a cause.² Such a case was reported by Bruns³ at the last Congress of German Surgeons.

2. An inflamed gland, adherent to the muscle, with torticollis from nerve irritation, may be mistaken for hematoma, as in the case mentioned.

3. Similar enlargements may in certain instances be of other origin than injury—such as fibrous, sarcomatous,⁴ or syphilitic tumors, arising, it may be,

in utero. Cases reported by Graser, Taylor,¹ Hadra,² and Holmes³ would seem to support this view.

It is possible, too, that injury in a tuberculous or syphilitic child might give rise to a myositis sufficiently exaggerated to cause permanent arrest of development and actual shortening.

In regard to injury in general, this is undoubtedly an occasional cause of acquired torticollis. It might operate at birth as in later life, and hematoma might be a coincidence, or we may fancy that fibers of the spinal accessory nerve might be involved in the induration following muscle rupture, with irritative spasm as a result. These, however, are simply conjectures, and are entirely distinct from the question of scar-contraction that we are considering. It may be objected that the negative evidence presented is of true value, compared with positive observations to the contrary, but it must be remembered that we are considering the usual and not the exceptional causes of wry-neck, and that neither Stromeyer nor any of the succeeding writers who have endorsed this theory have presented a single undoubted case in its support.⁴ Of the hypothesis, then, that explains the origin of congenital torticollis by muscle rupture, myositis, scar-contraction, and permanent shortening, we may conclude that it is simply an assertion unsupported by evidence. Further, I am convinced that injury at birth, of whatever nature or extent, is a possible, and not a probable, factor in the etiology.

From the hospital records of the past nineteen years I have collected 264 cases of wry-neck. During this time⁵ upwards of 3400 cases of congenital and acquired club-foot came under observation—a comparison that will show the relative infrequency of the affection under consideration.

The following is a brief summary of some of the points of apparent interest.

Of the 264 cases 32 may be considered as congenital, with the reservation before mentioned. As to sex, 155 were females and 109 males, which would tend to disprove the statement that the affection is much more common in males than females. In 77 it might be considered as acute, and in 60 chronic, in 48 having existed for from one to twenty years.

Excluding congenital cases, the duration of the affection was mentioned in 137 instances.

The affected side was mentioned in 187 instances. In 98 it was on the right, and in 97 upon the left side, in contrast to the assertion that it is much

¹ Archives de Tocologie, xv. p. 494.

² Rennecke: Centralbl. für Gyn., No. 22, 1886.

³ Centralbl. für Chir., No. 26, 1891.

⁴ Graser: Münch. med. Wochens., No. 13, 1887.

¹ Trans. Lond. Path. Society, xxvi. p. 224.

² N. Y. Med. Record, January 23, 1886.

³ Diseases of Childhood and Infancy.

⁴ Peterson: Zeitschrift f. orthopädis. Chir., B. i. H. 1.

⁵ Townsend: "Statistical Paper on Club-foot," Trans. N. Y. State Med. Soc., 1890.

more frequent on the right than the left side. Early childhood is the time of greatest susceptibility, but ten cases are noted at more than eighteen years of age.

In 106 cases of acquired torticollis the cause seemed apparent. Of these nearly 50 per cent. might fairly be classed as from cervical gland irritation, often after some contagious disease.

Age and sex of patient when first seen:

Age.	Males.	Females.	Total.
Congenital (?)	14	18	32
6 months or less	4	4	8
1 year	4	5	9
2 years	7	9	16
3 "	3	4	7
4 "	7	9	16
5 "	11	13	24
6 "	9	14	23
7 "	9	15	24
8 "	9	10	19
9 "	3	17	20
10 "	13	7	20
11 "	2	8	10
12 "	2	7	9
13 "	2	3	5
14 "	1	4	5
15 "	3	2	5
17 "	1	1	1
18 "	1	...	1
Over 21 years	5	5	10
Total	109	155	264

The duration of acquired torticollis when the cases were first seen:

	Acute.	Chronic.
1 month or less	49	...
2 months or less	20	...
6 " "	8	...
From 6 months to 1 year	...	17
1 year to 2 years	...	13
2 years to 3 years	...	8
3 " 4 "	...	7
4 " 5 "	...	1
5 " 6 "	...	4
6 " 7 "	...	1
7 " 8 "	...	1
Of 12 years' duration	...	1
Of 20 " "	...	1
Total	77	60 = 137

The apparent causes of torticollis, as noted in the records, were:

	Cases.
Enlarged cervical glands	5
Suppurating cervical glands	22
" glands following scarlet fever	11
Torticollis following scarlet fever, condition of glands not noted	7
Torticollis following diphtheria	4
" " mumps	5
" " measles	1
" " sore-throat	4
Suppurating otitis	3
Toothache	1
From cellulitis of neck	2
Total	65

Other causes were:

	Cases.
Cicatricial, following burns	3
Caused by injury of the neck	14
Probably of congenital origin	32
Total	49

Torticollis was associated with

Rheumatism	9 cases.
Fever	3 "
Malaria	4 "
Total	16 cases.

Torticollis was associated with disease of the nervous system as follows:

Chorea	3 cases.
Epilepsy	1 case.
Cortical irritation	1 "
Hysteria	1 "
Infantile hemiplegia	1 "
Meningitis	1 "
Spasmodic torticollis	1 "
Total	9 cases.

That duration of the affection is in itself a very potent factor in prognosis is illustrated by the in-patient records of 39 cases; 17 were admitted when the deformity had persisted for less than six months. Of these 10 were cured, 4 were improved, and 3 were not improved. Of 15 cases of more than six months' duration none were cured, 6 were improved, and 9 were not improved.

ACUTE CASES.

Sex.	Age.	Duration.	Supposed cause.	Duration of treatment.	Result on discharge.
M.	15	3 days.	Cold.	3 weeks.	Well.
F.	9	4 months.	Abscess of angle of jaw.	10 months.	Not improved.
F.	9	3 months.	Measles.	4 months.	Well.
M.	8	2 weeks.	Injury.	4 months.	Much improved.
F.	9	3 weeks.	.....	4 months.	Much improved.
M.	9	2 months.	Abscess at neck.	4 months.	Well.
F.	8	2 months.	Mumps.	14 months.	Much improved.
F.	5	1 month.	.....	3 weeks.	Well.
F.	9	6 weeks.	Sup. glands after scarlet fever.	4 months.	Well.
F.	8	2 months.	Scarlet fever	3 weeks.	Well.
M.	8	1 month.	Injury	6 weeks.	Well.
M.	6	4 months.	Scarlet fever	15 months.	Not improved.
M.	4	5 months.	.....	9 months.	Improved.
M.	7	2 weeks.	Injury.	1 year.	Well.
F.	9	3 months.	Abscess of neck.	2 years.	Well.
F.	10	3 months.	Abscess after scarlet fever.	2 months.	Well.
F.	9	2 weeks.	Spasmodic torticollis.	1 month.	Well.

Results.

Well,	10	Average duration of treatment, 3 months.
Improved, 4	"	" " " " " 11 "
Not improved, 3	"	" " " " " " "
Total,	17	

CHRONIC CASES.

Sex.	Age.	Duration.	Supposed cause.	Duration of treatment.	Result on discharge.
M.	10	9 months.	Cold.	1 year.	Much improved.
F.	14	Long.	Measles and mumps.	4 months.	Not improved.
F.	9	5½ years.	Enlarged glands.	3 months.	Not improved.
M.	9	7 years.	Scarlet fever.	3 months.	Not improved.
M.	7	2 years.	Myositis ossificans [sic].	1 month.	Not improved.
M.	8	7 months.	Enlarged glands.	6 months.	Much improved.
F.	8	1 year.	Nystagmus, hysteria, etc.	14 months.	Much improved.
F.	12	2 years.	Meningitis.	6 months.	Much improved.
M.	10	5 years.	Injury.	5 months.	Not improved.
F.	6	Long.	.....	7 months.	Not improved.
F.	12	8 years.	Scarlet fever.	4 years.	Not improved.
F.	8	1½ years.	Cervical abscess.	4 months.	Not improved.
F.	13	6 years.	After convulsions.	.....	Not improved.
F.	13	1 year.	.....	9 months.	Improved.
M.	10	9 months.	Cervical abscess.	9 months.	Much improved.

Results.

Well, None.
 Improved, 6 Average duration of treatment, 8 months.
 Not improved, 9 " " " " 9 "

Total, 15

It should be noted that with few exceptions these patients were treated at a time when operative interference was not recognized as an attribute of orthopedic surgery as practised at this institution, otherwise every recognized method of treatment seems to have been employed, in most instances for many months. Of four cases of long standing treated recently by open incision, one was cured, two nearly cured, and one improved, the average stay in the hospital being but three weeks.

It seems fair to assume that there is an actual arrest of development in a contracted muscle, and that the more persistent the irritation, the more rapid the growth, the more marked will be the deformity. To overcome the contraction of such a muscle it must be overstretched to a degree corresponding to the amount of previous shortening. In the neck this is almost impossible by mechanical means when the affection has become chronic in character. This affords the rational indication for treatment: to hold the head by some appliance in perfect position from the outset of the affection when rectification is easy, especially if it appears to be caused by the presence of inflamed glands, which may persist long after the original source of irritation has been removed, not alone because rest is the proper treatment for inflamed glands, or for the relief of the strain upon the nervous system of a painful deformity of this character, in itself an important factor, but that we may not have the

deformity-habit with shortened muscles and fascia to deal with when active contraction is no longer present. The removal of enlarged or suppurating glands, especially if they lie about the motor point of the contracted muscle, should certainly be considered. As this often necessitates a division of the sterno-mastoid we may at once take away the cause and remedy the result by this procedure. My time will not allow me to speak of other causes of wry-neck or of general considerations in treatment which must be governed by the indications in the individual case. They are sufficiently described in works upon this subject.

The induration that follows muscle-rupture usually disappears in from two to six months; if deformity is present, greater than may be explained by the character and size of the tumor, it is probably of intra-uterine origin and should be treated on the principles that apply to that affection—and, with certain modifications, to the acquired form that has persisted for any length of time; that is, free and early division of all contracted tissues that do not rapidly yield to milder methods, followed by the careful after-treatment which all cases of this character require. From the evidence presented, I think we may conclude, contrary to the prevailing theory, that the causes of congenital wry-neck operate in a majority of cases before birth rather than during delivery. That acquired torticollis in very young children may be as persistent in duration and as disastrous in its results as the congenital variety—the age of the child, the persistence of irritation, the arrest of development in the contracted parts, and the rapidity of growth being the determining factors—and that here, as elsewhere, the prevention of deformity in the first instance, or its rapid rectification if seen in the later stages, should be the object of our therapeutic efforts.

TUBERCULOSIS OF THE BONES AND JOINTS.¹

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FROM the time of Hippocrates many authors have given descriptions of joint-disease that are easily recognized as tuberculous. Richard Wiseman, of London, in 1734, gave what was probably the best description up to his time, calling the disease "white swelling." He thought the condition the result of scrofula. Benjamin Bell and R. Brown Chester believed that the tumor albus was due to two different causes—the one scrofula, the other rheumatism and trauma. In 1807 Samuel Cooper stated that in healthy well-nourished persons the prognosis of joint-inflammations was good, while in scrofulous individuals the tumor albus resulted. In 1842

¹ Read before the Wisconsin State Medical Society, June, 1891.

Rokitansky taught that the great majority of these tumors were due to tuberculosis of the synovial membrane. Then Virchow demonstrated that the worst forms of tumor albus, especially those of the knee, were due to miliary tubercles; and in 1865 R. Volkmann demonstrated the tubercles of tuberculosis in joint-disease.

Tuberculous processes in bone are usually seated at the epiphyseal ends of the long bones, in the vertebræ, in the spongy bones of the carpus and tarsus, and less frequently in the long bones of the hand and foot (spina ventosa). Bones are infected in two ways: First, the bacilli that have gained entrance to the blood and general circulation may be carried directly through the nutrient artery to the epiphysis of a long bone, and becoming arrested in some small terminal branch escape through the walls of the vessel, and form tubercles in the spongy tissue; or, second, small particles of caseous matter, usually in the lungs, ulcerate their way into a pulmonary vein, and are carried to the heart, and by the arterial system are carried to some small terminal artery in the epiphysis of a long bone, or in a spongy bone, in which they lodge and form a tuberculous deposit. (Krause.)

The election of the epiphyses of long bones and the short spongy bones as the usual seats of tuberculous deposit may perhaps be explained by the blood-supply. As growth takes place at the epiphysis, this part receives more blood than does the shaft. The bloodvessels are larger than those supplying the compact bone through the periosteum. The same may be said of the spongy bones. Bacilli or caseous emboli having been implanted in the epiphysis of a bone, form tubercles, and, coalescing, these produce nodules that may be the size of a hazel-nut or walnut. The nodules may be hemmed in by sclerotic bone and healthy granular tissue, and a cure effected, or softening and suppuration may sooner or later occur. The bone-cavity may be lined by a pyogenic membrane made up almost entirely of tubercles held together by fibrinous deposit.

Whether the surrounding bone is free from deposit, or there is no pyogenic membrane, it is in either case usually infected with caseous material, so that there is an easy means of systemic infection. Often the tuberculous nodule undergoes degeneration, and is separated from the surrounding bone by inflammation, resulting in a sequestrum. These sequestra may and often are found in the epiphyseal ends of the two bones entering into the formation of a joint. In a case of tuberculosis of the knee-joint, in which resection was recently performed, such sequestra were found in the outer condyle of the femur and in the head of the tibia, each about the size of a hazel-nut.

In cases in which the tuberculous nodes undergo softening and suppuration they generally, by a process of ulceration, reach the surface of the part through the periosteum, producing a fistula, or, breaking into the joint, infect the synovial membrane, giving rise to tuberculous synovitis, with perhaps destruction of the cartilage and caries of the bone-surfaces.

Disease of the short bones of the foot is common at all ages, while in children disease of the bones of the hand is rare. Caries of the ribs is more common than that of the flat bones, and is frequently a result of tuberculous pleurisy. In a case of tuberculous pleurisy, with fistula, recently operated on after the method of Schede, five ribs were found carious.

Tuberculous disease of the vertebræ usually involves their anterior surfaces. The vessels penetrate the vertebræ perpendicularly to their surfaces, and a growth of cells, in the form of granulation tissue, surrounds the vessels as they enter the bone, destroying it and producing cavities, usually of small size. Many of these may be formed in a single case; two or more may coalesce, forming a large cavity; in this way much of the anterior surface of a vertebra may be destroyed. The superincumbent weight of the body forces the vertebræ together, and the characteristic deformity of Pott's disease is occasioned. The disease may terminate favorably by a splint of bone being thrown out on the anterior surface of the vertebra, beneath the anterior longitudinal ligament; or suppuration may take place and the pus may follow the spine downward, and give rise to a large abscess in the abdomen.

Joints are infected in two ways: First, by a deposit that has formed in the epiphysis breaking through into the joint and infecting the synovial membrane; and second, by a primary infection of the synovial membrane. It is also thought that a joint may become infected from a deposit in the epiphysis through the lymphatics.

The tuberculous processes in the synovial membrane are of two kinds: In the one there is an abundant growth of tuberculous and connective tissue (granulation tissue); the synovial membrane is much thickened, with little tendency to caseous degeneration; there is usually but little fluid in the joint. In the other there is but little granulation tissue, but an abundant formation of pus, which may break through the capsule and give rise to a peri-articular abscess.

According to a table compiled by Krause, in 77 per cent. of all cases of tuberculosis of joints the disease commences primarily as a deposit in the bone.

Caries sicca. It is only recently that this form of joint-disease has been known to be of tuberculous origin. The disease commences in the synovial membrane, with the formation of little or no pus.

There is a thin layer of granulation tissue in the synovial membrane, which advances into the cartilages, destroying these, and often also the articular surfaces of the bones. This form of disease is usually found at the shoulder- or hip-joint.

Trauma is the most frequent exciting cause of tuberculous processes in bone. The predisposing cause is scrofula. Much has been written, regarding the relationship of scrofula to tuberculosis. An individual is scrofulous when there is a certain constitutional condition—a tendency to chronic inflammation and suppuration of particular tissues—even though he should be apparently perfectly healthy; while one should not be called tuberculous unless there is somewhere in the system a tuberculous process (Krause). Given a child predisposed to tuberculosis, having a scrofulous diathesis, not well nourished, a slight injury, a twist or wrench of a joint, a slight laceration of tissue with extravasation of blood, provides a favorable nidus for the growth of bacilli; and at this point a tuberculous inflammation is likely to be established. Now, a well-nourished person, without this predisposition, might receive a similar injury and escape a tuberculous process. If the injury is more severe—perhaps a luxation or a fracture—healing takes place, even in one predisposed, without the development of a tuberculous process. This is accounted for in the case of luxations by the fact that the rupture of the synovial membrane gives the fluids in the joint an opportunity to escape, thus relieving tension and the resultant irritation. In the case of fractures the cell-proliferation, which is very great, and that occurs as a part of the healing process, prevents the growth of the tubercle bacillus at the seat of injury.

Age is an important factor. Tuberculous processes in bones and joints are much more common in children than in adults.

When a tuberculous deposit has taken place in the epiphysis of a long bone or in one of the small bones, there will be more or less pain on pressure; and if the deposit approaches the periosteum there will at this point usually be edema. The affected joint is more or less painful on motion, and is to some extent fixed. The patient is indisposed to use the member. There is little or no fever, and usually no effusion into the joint.

Should the tuberculous process attack the synovial membrane there will usually be an effusion of serum or of serum mixed with pus. The temperature of the joint as well as of the body is increased. If pus forms, the joint becomes swollen; the symptoms are intensified by use of the joint, and with rest more or less disappear. One of the characteristics of the disease is the ever-changing character of its symptoms.

The swelling may be within or without the joint;

if within it is the result of effusion or of the growth of granulation tissue, and occasions semi-fluctuation. The abnormal position in which an inflamed joint is held was by Bonnet ascribed to the effusion, the limb assuming the position allowing the greatest degree of distention of the capsule. To some extent this is true, but muscular contraction from irritation of the synovial membrane also plays an important part. The skin covering the joint is white ("white swelling"), and it is here and there marked with blue veins.

In many cases, especially in children, the prognosis of tuberculous processes in bones and joints is favorable. The granulation tissue becomes denser, is hemmed in by connective tissue which contracts and cicatrizes. If the process affects a joint this becomes more or less distorted and ankylosed, even in cases in which pus has formed. Healing may take place by absorption of the pus, or after its spontaneous discharge. Cases of Pott's disease in which a cure has been effected, with or without deformity, are familiar to everyone.

In other cases of tuberculosis of the bones and joints, in consequence of excessive suppuration, high fever and loss of appetite, especially if the process is in one of the larger joints, the patients become anemic, lose weight, and die without other organs becoming affected, but with the general appearance of phthisis.

Again, as in all cases of chronic suppuration, especially in bone, the patient may become albuminuric, suffering from amyloid degeneration or parenchymatous inflammation of the kidneys. One must conclude that as a result of suppuration in bone, chemical substances are produced, taken up by the lymph-channels, distributed through the blood, and in circulating through the kidneys produce amyloid degeneration. Tuberculosis of a joint may be associated with basilar meningitis, tuberculosis of the lungs, or acute miliary tuberculosis. This is especially common in children. These complications or associations may follow operation, as by resection or curetting a fistulous tract, a vein or lymphatic may be opened during the operation, and the germs gaining an entrance are distributed throughout the system.

In my own practice during the past year two cases of acute miliary tuberculosis have followed operations on tuberculous bone. One was a case of resection of the hip, in which the acetabulum was much diseased, and the other a case of curetting several of the tarsal bones and fistulous tracts.

Krause mentions several interesting cases: In one, a boy fourteen years old, strongly built, suffered from a tuberculous process in the lower end of the radius. An incision was made down to the bone, which was opened with a chisel, and the deposit cut

away with a sharp spoon. Everything progressed favorably until the fourteenth day, when the boy complained of headache. In quick succession all the symptoms of basilar meningitis appeared, and he died four weeks after the operation. The autopsy disclosed a tuberculous meningitis, as well as an eruption of fresh miliary tubercles in nearly all the internal organs. Nowhere was there a caseous deposit to be found. Acute miliary tuberculosis following an operation can only be attributed to the operation when an autopsy shows that there were no caseous deposits in the body.

TREATMENT.—The general system should be improved by means of nourishing food, fresh air, cold baths and tonics. If the joint is irritated or inflamed it should be put at rest. Nothing answers a better purpose than the plaster-of-Paris cast. It not only fixes the joint, thereby relieving it of the irritation of motion that tends to keep up the inflammation, but it also exerts equable pressure, thereby maintaining the superficial circulation.

When a joint—the knee or hip, for instance—is much inflamed, extension should be applied, especially if there are spasmodic muscular contractions. This relieves the joint-surfaces of undue pressure, and prevents the spasmodic muscular contractions that are not only injurious, but also prevent sleep and wear the patient out with pain. In Pott's disease of the spine, Sayre's plaster-of-Paris jacket, with the jury-mast in suitable cases, produces the necessary extension and fixation, and in the great majority of cases will effect a cure. In all cases of tuberculous joints the cure may be but temporary; there is always danger that some trauma, a twist or a wrench, may bring the latent and apparently healed process into new life. It is probably true, however, that a considerable number of cases of this class are due to new infection, and not to the rekindling of the old inflammation. In cases of cure, with false or true ankylosis, even if the position of the limb is not good, the greatest circumspection should be used before the ankylosis is broken up, as the resultant injury may light up anew the old tuberculous process.

The treatment of tuberculous joints and tuberculous abscesses with iodoform-glycerin injections was formulated by Billroth and Mikulicz. A trochar is thrust into a tuberculous joint containing pus, the pus allowed to drain off, and the joint is washed out with a ten per cent. solution of boric acid. A ten per cent. emulsion of iodoform in glycerin is then injected into the joint. Krause gives the maximum quantity that should be injected at a time as 100 grams (3 ounces). After the injection, the joint is freely moved in every direction for the purpose of bringing the iodoform in contact with every part of the joint-surfaces. In cases in which suppuration

has not been established, the washing out may be dispensed with. The injections are made every four weeks, and both in diseased joints and in cold abscesses are often followed by the most happy results. The iodoform applies itself to the internal wall of the abscess, destroying the tuberculous tissue and stimulating a growth of healthy granulating tissue that cicatrizes. Bruns and Nauwerck examined the wall of a tuberculous abscess one week after an injection of iodoform, and found that the tubercle bacilli had disappeared, and that healing was taking place.

The following case well illustrates the beneficial effects of iodoform injections:

E. H., three years old, was brought to me with Pott's disease of the lower dorsal and upper lumbar vertebrae. There were lameness and dragging of the right leg, and flexion of the thigh on the pelvis. There was a continual elevation of temperature. Sayre's plaster-of-Paris jacket was applied, and worn for four years, being renewed every three months. At the end of two years, when a jacket was being applied, a swelling of considerable size was noticed on the right side of the spine below the ribs. At the end of three months it had increased considerably in size, and a small trochar was thrust into it, and one and a half pints of pus obtained. Three ounces of iodoform emulsion were injected through the canula into the abscess cavity. Five weeks later one pint of pus was withdrawn and iodoform emulsion injected. Eight weeks afterward six ounces of serum, almost entirely free from pus, were withdrawn. The swelling then entirely disappeared, the boy grew fat, lost his lameness, and has been perfectly well since.

Billroth has recently recommended free incision of abscesses, the removal of all diseased tissue with a bit of iodoform gauze, and the use of the sharp spoon for carious bone and fistulous tracts; the divided fascia and muscles are then united with interrupted sutures, and the skin with a continuous suture, leaving an opening through which to fill the cavity with the iodoform emulsion. The results are said to have been favorable.

What the final verdict of the profession will be, as regards the healing power of tuberculin on tuberculous processes in bones and joints, it is difficult at present to determine. That it is not the great panacea for all tuberculous processes that had been hoped must be apparent to all that have used it. That it is without benefit, and in acute cases with high fever even harmful, I believe is also true. But in chronic cases, especially where fistulous openings exist, it may and probably will prove of great help to the surgeon, either with or without a subsequent operation.

For the primary tuberculous deposit in bone, an early operation is indicated, to prevent, if possible, infection of surrounding bone, neighboring joints,

or, what is still more to be feared, the occurrence of acute miliary tuberculosis. If a fistulous tract exists, it leads the way to the diseased bone, which with the greatest possible care should be cut away with a sharp spoon, removing all the diseased tissue, both in the bone and in the fistulous tract. If possible, the operation should be performed on a bloodless limb, to reduce the liability to infection through the veins and lymph-channels to the minimum.

Resections of the synovial membrane or of the bones should only be undertaken when it is apparent that more conservative methods will not succeed. Better results from conservative methods may be expected in children than in adults. If possible, resection of an epiphyseal cartilage should always be avoided in children, since it prevents the proper growth of the limb. In cases of suppuration within a joint, with high fever, loss of weight and increasing weakness, the joint should be opened and all diseased tissue removed. If the disease is confined to a portion of the synovial membrane or cartilage, only these parts should be removed. Resections proper should be reserved for more extensive disease, and amputation for extreme cases, in order to save life.

THE SUBCUTANEOUS USE OF HYDRARGYRUM FORMAMIDATUM SOLUTUM IN SYPHILIS.¹

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In 1882, Liebreich, of Berlin, suggested the use of a subcutaneous injection of a 1 per cent. solution of a preparation that he called hydrargyrum formamidatum. His claim for its usefulness in comparison with other preparations was that, being a neutral solution, there was little or no danger of abscesses following its injection, and that there would be less pain. In order to learn if the solution is properly prepared, it should be tested with an aqueous solution of iodide of potash, 1:20, added drop by drop: no red color, or red precipitate, should appear, but only a yellow cloudiness. It should have a neutral reaction, and should not precipitate a 1 per cent. solution of albumin.

The injections are made deeply into the gluteal muscles, the patient standing, the needle being introduced obliquely into the muscles from below rather than at right angles to them. The number of injections to be given will vary in different patients. Usually twenty are sufficient to effect a cure, or at any rate to show if the method is to be of any use. In acute syphilis the injections begin to show their good effect after the fourth or sixth, but a longer time is

required in chronic cases. They may be given every day, every other day, or twice a week. If there be no hurry in the case, one every other day is sufficient.

The pain varies in different persons, and even after different injections in the same person. It begins almost immediately, and the side injected remains sore for some hours. I inject first one buttock and then the other. I have never made the injection in any other part but once, and this was into the thigh of a woman. This, though not followed by an abscess, was very painful for several days; this method was, therefore, not repeated.

I will give a history of a few of my cases:

CASE I.—T. J., aged sixty years, married, came to me in January, 1884. He first had signs of syphilis ten years before, and had been thoroughly treated with mercury and potash at the time. All symptoms disappeared within a year, and since then his wife has given birth to one apparently healthy child. When first seen by me the left hand was swollen and indurated, there being no pitting on pressure. The skin was not pliable or elastic, and the swelling and induration extended up the arm to the elbow. This condition of the arm had been coming on for many months, the size of the hand gradually increasing and the swelling extending further up the arm until the limb could be very little used, and was carried in a sling. There were no pain, redness, or appreciable swelling of the lymphatics. On the palms of both hands were large and small characteristic maculæ with whitish crusts upon a reddened base. The soles of the feet showed similar spots, with a small, indolent ulcer between the little and next toe of the right foot. There was chronic catarrh of the throat and nose. I put him on the usual formulæ of mercury and potash, trying them together and separately and in different combinations until he refused to take any more. No good had been gained by this treatment. I then commenced the subcutaneous injection of 15 m. of a 1 per cent. solution of hydrargyrum formamidatum every other day. The injections were made deeply into the gluteal muscles, the right and left sides being taken alternately. After the eleventh injection he began to show evidences of mercurialism, both in the odor of the breath and the puffiness of the gums, and the injections were stopped for a week. The buttocks were sore, but there was no induration anywhere, and no symptom of an abscess. Six more injections were then given, one every day, when they were stopped altogether. This made seventeen injections in all. After a week's intermission the spots on the hands and feet had entirely disappeared, and the ulcer of the toe had healed. The condition of the mouth was improved, and in another week, without further treatment, had even still further improved. The induration of the hand and arm was much lessened, so that the sling could be given up, and the hand used quite naturally. I followed this case for six subsequent years, and saw no return of the symptoms described. The man died as a result of chronic alcoholism.

¹ Read at the meeting of the American Dermatological Association, held in Washington, September 22-25, 1891.

CASE II.—January 2, 1884, K. B., aged forty-five years, unmarried, consulted me, denying any history of chancre or venereal disease. There was the eschar of a suppurated gland in the left groin, the cause of which he could not or would not explain. The palms and soles of both hands and feet were almost entirely covered with a whitish, slightly scaly eruption. There was no itching, but there was intense dryness. Some of the fingers and toes had ugly-looking fissures between them. There was a slight eruption of a similar kind on the outside of both elbows, and a few copper-colored spots scattered over a very hairy chest. The trouble on the hands had existed for ten years, and was then worse than ever before. The patient was a high liver, a popular diner-out, and "a great man for women." The condition of his hands was such that he always wore gloves, and many comments upon this eccentricity from high and low society worried him. He had tried many remedies for eczema, both internal and external. I persuaded him, with much difficulty, to try the subcutaneous injections of mercury, besides giving him a mild mercurial salve to rub upon his hands at night before putting on his gloves.

On February 2d the first injection was made, and it was repeated every other day until twenty-one had been given. During the treatment I could not keep my patient from any of his many excesses, and he would not agree to the idea that he had ever had syphilis. The result was unfortunate in one sense, because, instead of the hands getting well, it was the feet, elbows, and chest that did so, while the hands remained very much the same. He told me that he was tired of the injections, and was going to try someone else not a regular practitioner. I met him within the last two months, and he was still wearing his gloves.

CASE III.—In November, 1885, H. L., aged twenty-three years, unmarried, son of a physician, was brought to me by his father for a diagnosis. He denied ever having had a chancre, or ever having been exposed to the danger of one. He was persuaded to strip off his clothing, when there was disclosed a perfectly typical universal roseola. The remains of an indurated chancre was found upon the prepuce. The young man was a graduate druggist, and, it was found out, had been dosing himself with mercury, potash, sarsaparilla, and other things, until his digestion was much impaired. All medicine was stopped, and he was put upon the injection of 20 η of hydrargyrum formamidatum every day. After receiving ten, they were stopped for four days and then continued. After the fourth injection the roseola faded rapidly, and had disappeared after the tenth. They were continued on account of sore-throat and of mucous patches in the mouth. After the sixteenth injection he stopped coming, contrary to my advice, although all his symptoms had disappeared.

A year later he came to ask me if he could get married, and was much disturbed when I told him he ought not to do so. His symptoms were enlarged glands and chronic sore-throat, and I advised him to go through another course of injections. This he did not do, but within a month I

received cards announcing his wedding. Four years after this time I met his father, who told me that his son had a child three years old, which was apparently healthy.

CASE IV.—In May, 1886, L. J., aged thirty-two years, unmarried, thin, anemic, nervous, and dispirited, was brought to me in consultation. He confessed that he had had a chancre two years before, followed by an eruption. He had been in the hands of many physicians, and at last had put himself under the charge of a quack, who packed him in moist clay and kept him thus for days at a time. He came to me in bad condition, with broken-down gummata on his neck, face, and right leg, and with a chronic sore-throat. A day or two afterward a severe attack of neuralgia of the left side of the head was duly followed by one of the worst attacks of herpes zoster I ever saw. The eruption extended from the eyebrow over the left side of the head as far down as the ear. Morphine was the only measure that relieved the pain, which lasted for three weeks. The vesicles became pustules, and finally left deep, copper-colored scars that have never faded away.

Injections of mercury were begun after this attack, and given every third day, until ten had been given. The results were decidedly beneficial, but they were stopped on account of my absence from town for six months, and his desire to go to the Hot Springs of Arkansas. He is at present as well as a delicate man can be.

CASE V.—In October, 1890, S. W., aged forty years, unmarried, was brought to me in consultation. He was a tall, muscular, healthy-looking man, who confessed to having had a chancre two years before. He had been put through the regular course of mercury and potash, and was then suffering from dyspepsia and intolerance of any drugs. There were *psoriasis palmaris et plantaris*, moist condylomata on the scrotum, with one obstinate mucous patch on the right side of his tongue.

Like others he had gone the round of regular and irregular physicians, so that something other than the usual course had to be pursued. Subcutaneous injections were begun, the dose being 20 η three times a week. His tolerance for mercury was great; he received sixteen injections before much improvement was manifest. They were then increased to 30 η three times a week. After receiving thirty, all the syphilitic symptoms had disappeared, and he was told that he needed no more. He insisted, however, that as he had not been so well since he first contracted the disease, he must have further treatment. He came twice a week at first, then once a week, then once in two or three weeks, until he had received over a hundred injections. I have not now seen him for nearly six months.

CASE VI.—In January, 1891, W. A., aged thirty-three years, unmarried, consulted me, having had a chancre nine years ago. He had been treated in the usual way ever since with mercury and potash. One of our throat specialists, who was treating him for syphilitic sore-throat, sent him to me to see his hands and feet. The palms and soles were covered with a macular, syphilitic eruption—so-called psoriasis. There were also several indurated papules

upon the scrotum. After stopping all medicine by the mouth, he was put upon the subcutaneous injection of 20 m. of hydrargyrum formamidatum every other day. They had to be discontinued after the sixth injection, because he was clearly becoming pyralized. He had to leave town at this time, and I did not see him for several weeks. While away he took no medicine, and when he reappeared his hands and feet had cleared up, the papules on his scrotum had disappeared, and he had no trouble with his throat. I wanted to stop the injections, but he insisted upon going on with them from time to time, as opportunity afforded, until he has received nearly fifty. Like the preceding case, he feared another relapse such as he had previously experienced.

Besides these and many other cases in private practice, the injections have been used by me in dispensary practice, and with equally good results. There are, however, some cases of syphilis that at first seem to defy any treatment. I call to mind one case of malignant syphilis in a man aged twenty-three, which every form of mercury or potash failed to affect. The large tubercular syphilide that covered the patient's body from head to foot was only aggravated by the injections. It was necessary to put him on cod-liver oil and tonics alone, and to dress his whole body in soothing salves until the acute stage had passed. In this case subcutaneous injections did more harm than good, were very painful, and, if persisted in, might have been followed by abscesses. The patient was ultimately able to take $\frac{1}{4}$ gr. of salicylate of mercury three times a day, and is slowly recovering. On the other hand, a stable-boy, nineteen years old, with an acute macular syphilide, was so quickly cured of it that he stopped coming to the dispensary altogether. He was seen several times on the street and told to come, but laughingly said that there was nothing the matter with him.

In summing up the results of my experience with these injections, I feel that I may say that in them we have a valuable addition to the list of remedies in treating syphilis; that there is no danger of abscesses following their use, since I have never seen one after having given as many as a thousand injections; and, lastly, that in many obstinate cases they can frequently be relied upon to accomplish what no other treatment has accomplished.

CLINICAL MEMORANDA.

LIGATION OF THE EXTERNAL ILIAC ARTERY FOR FEMORAL ANEURISM.

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THE following case, recently under my care, presented so many features requiring surgical judgment, that al-

though the result was unfortunate, lessons remain and may be of interest to others who may be similarly placed.

History: The patient, S. A., forty-eight years of age, was a large, muscular, colored male, born a Virginian slave, of healthy parentage. About January 15th, following an injury, a swelling developed in the right femoral region, which he described as nodulated, pulsating, and painful. About the same time his leg swelled and the sole of the foot and toes were numb and tingling. The swelling developed slowly, until it had assumed enormous proportions. On examination, in consultation three months later (April 15th), the following condition was observed: The patient was much emaciated, the expression anxious; the right thigh was enormously enlarged and intensely hard, except at its upper third, where it presented a large fluctuating swelling, the upper portion of which overlapped and obliterated the femoral fold. An expansile pulsation and marked bruit were present. The scrotum was slightly swollen and pushed far backward. The patient denied syphilis. The coxo-femoral articulation was normal. The thigh was flexed upon the abdomen, and the patient for three weeks had been unable to sleep in a recumbent position. All the superficial vessels were atheromatous. The situation of the aneurism, very high up in the Scarpa's triangle; the uncertainty of its origin, whether from the common or superficial femoral, rendered it an unsatisfactory case for compression, and its size forbade the possibility of cure by ligation of the superficial femoral below (Brasdor's operation?). There remained the ligation of the external iliac, and this the patient consented to. Three days later he was transported thirty-three miles to the hospital, and while being transferred to a carriage before entering the train he experienced a sudden faintness, with a relief from pain, and was able to extend the thigh. It is probable that the aneurism was diffused at this time.

On the day following admission (April 19th) his condition was as follows: Pulse 100, temperature 100°, respiration 56. The thigh was hard; no pulsation or bruit could be distinguished at this time or afterward, and the temperature of the foot and lower third of the leg was below the normal. The urine contained no albumin. The entire leg was gangrenous. Here, then, was a man of forty-eight, with atheromatous arteries, a large, diffused femoral aneurism, dry gangrene of the leg, and in a condition of profound shock. Evidently there was nothing to do but to wait for reaction.

Five days later, the condition having improved (temperature 100°, respiration 40, pulse 104), it was decided to ligate the external iliac artery, control the return circulation by an Esmarch tube applied below, to open the aneurism, turn out the clots, and thoroughly pack the wound. Subsequently amputation was to be performed. Assisted by Dr. T. S. K. Morton, Dr. John B. Deaver, and Dr. Baldwin, the resident, in the presence of Drs. Wilson, Neilson, Stern, H. C. Deaver, Brinkman, McGee, and others, the external iliac artery was readily secured near its proximal position, at which point the coats of the vessel were normal. The sac was then incised and about a quart of clotted blood removed. The vessel in this locality was atheromatous. There was no hemorrhage either from the incision or from the sac; the patient reacted quickly, and the ligation wound united by first

intention in three days. The duration of the operation was sixty-five minutes. The condition was decidedly improved (temperature $98\frac{3}{4}^{\circ}$, respiration 36, pulse 102), until the following night, when, during the absence of the nurse, the patient left his bed and walked about ten yards, where he was subsequently found in a condition of syncope. Subsequently his pulse was more rapid, and difficult to obtain in the radials, his respirations were increased, and the heart-sounds over the precordia were muffled. Notwithstanding these untoward symptoms, the condition improved for three days, and the line of ulceration formed obliquely upon the perineal region. At the end of this period the general condition was not quite so favorable (temperature 100° , respiration 40, pulse 104). A line began higher up on the inner aspect of the lower third of the thigh, and amputation was decided upon. The thigh was amputated by a short anterior flap communicating with the aneurismal sac, and a long posterior flap.

Though somewhat shocked by the operation, the condition improved, and the temperature became normal— 98.4° . The wound did well and the flaps united firmly, but required to be irrigated daily with an antiseptic solution on account of the communication with the sac. The general condition gradually failed, delirium of a peculiar character supervened, with convulsions, the patient snapping and biting at everything, and three days after the amputation death ensued.

On post-mortem examination, the inguinal (ligation) wound was completely and firmly united, and the flaps were firmly united, except where the drainage-tubes made their exit. Only the heart was examined, and both ventricles were almost completely filled by large, yellow (ante-mortem) clots, which were evidently the cause of death. These probably began to form on the second night subsequent to the ligation. But for this additional and irremediable condition it is probable that the cure would have terminated favorably, notwithstanding the many and difficult complications met.

UNUSUAL MODE OF TRANSMISSION IN A CASE OF DERMATITIS VENENATA.

By J. ABBOTT CANTRELL, M.D.,
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MARY G., thirty-four years of age, was admitted into the general wards of the Philadelphia Hospital on September 24, 1890, and was removed on October 26th to the maternity ward, where she was delivered of a male infant. She continued well until the 29th, when she complained of an itching and burning sensation of the abdomen, which showed an inflamed surface, covered with vesicles and bullæ.

I subsequently learned that two nurses, one from the surgical and the other from the maternity ward, left the hospital at 2 P.M. on the 26th instant, taking a stroll through an adjacent cemetery gathering leaves and bringing a number back with them. Among the leaves were a number of ivy leaves, but this fact was not known by the nurses at this time. At 4 P.M. some of these leaves were placed on a table in the maternity ward, but in a separate compartment from that in which the patient was confined. They remained until the morning of the 28th, when they were thrown away. The

nurse stated that after her return her hands were washed several times with ordinary soap and water, and when dressing the young mother her hands came in contact with the skin of the abdomen, and thus probably conveyed the ivy poison to the spot affected, as her hands, which at this time were apparently not affected, showed the eruption in a day or two. It also appeared on the abdomen of the patient at about the same time.

I saw the patient for the first time, upon invitation of Dr. Barton Cooke Hirst, the obstetrician on duty, on October 29th, two and one-half days after her confinement. I found situated upon the abdomen and surrounding the umbilicus, having a radius of full five inches, a vesicular and bullous eruption, with the whole surface swollen and edematous and covered with the characteristic yellowish-brown, gummy discharge of dermatitis venenata. Upon inquiry, I then learned the foregoing facts. After using a solution of fluid extract of *grindelia robusta*, two drachms to the pint of water, for about a week, the eruption entirely disappeared.

From a search through the literature of the subject I can find only one parallel case—that referred to in an exhaustive work on the subject by Dr. J. C. White, of Boston. This patient was a child of six years, that had received the poison from a servant who was himself unsusceptible to the poison. This servant had been clearing weeds, among which were some ivy vines from the garden surrounding the house, after which he had washed his hands thoroughly several times with vinegar and soap after entering the house. In the afternoon he took the child to a pond for a bath, holding him by the armpits, and afterward rubbing the axillæ and the back. In two or three days deep ulcers formed in both regions.

The point of interest in these cases is the mode of contracting the disease. It has been known for years that the poison may be absorbed by handling the leaves or by being near the vine. In the latter case there seems to be an idiosyncrasy to the disease. I believe the case of Dr. White and this one are the only cases recorded wherein the disease was contracted by the mere handling of a person affected.

SPINA BIFIDA.

By T. A. HARRIS, M.D.,
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IN THE MEDICAL NEWS of August 8, 1891, is an article by Dr. E. P. Hurd, on the "Excision of the Spina Bifida," which recalls an operation I performed on the 23d of July, 1891, for this condition. I was asked by a country friend to see a case of spina bifida in a child about five days old. I found in the lumbar region a prominence about the size of a hulled walnut, crowned by a thin membrane. This, my friend Dr. Prickett had punctured with a sharp bistoury, allowing a small amount of serous fluid to escape, though there was no discharge from it when I saw it. The child was in vigorous health without any paralysis of the lower extremities. The body of the prominent mass consisted of integument, and was slightly pedunculated.

As a test I first tied an ordinary cord tightly around the base of the tumor. The only effect was to give the child very decided pain, certainly not paralyzing its

lower extremities, as was evinced by very decided kicking. I concluded that the spinal cord was not involved in the tumor. Removing this cord I then passed my knife around the base of the tumor, cutting through the integument, and then tied a silken cord around it, drawing it very tight, burying it in the cut I had made in the integument. This effectually shut off all circulation in the tumor, and cut off all communication with the spinal canal. I then freely scarified the membrane and the top of the tumor to allow free discharge of any fluid or blood contained in it. My suggestion to Dr. Prickett was that in four or five days he should put on another tight ligature. This he did, and in about ten days the entire mass fell off, leaving a sore spot about as large as a nickel, which in two weeks thereafter was healed, sound and well, leaving the child in apparent health. I do not think there was more than one (the last lumbar) vertebra involved. My expectation is that with the growth and development of the child the laminæ will practically close the space. I made no attempt to dissect out the membranes, but contented myself with so ligating the sac as to shut off all communication with the spinal canal, and trusted to the inflammatory action set up by the ligature to close permanently the communication with the canal. It would have been a much nicer operation to have cut off the mass and to have brought its edges together, but I did not believe that any stitches or plasters I could use would suffice to keep out weeping from the spinal canal sufficient to prevent union of the cut surfaces, having done this on the 23d of July, and immediately after August 8th. Seeing the article by Dr. Hurd has prompted me to report my case and thus to add another to the rare cases of recovery from this not very uncommon defect. I also wish to raise the question whether in the future active measures may not prove more effective in these cases than temporizing measures have in the past.

A CASE OF INTRA-CRANIAL HEMORRHAGE: AUTOPSY.

BY E. KELL, M.D.,

PHYSICIAN TO W. H. HOSPITAL, BLACKWELL'S ISLAND.

J., a laborer, twenty-eight years old, came under observation August 29th, at 3 P.M., suffering from alcoholism and a contusion over the left eye. The man was rational. At 5 o'clock, he suddenly became unconscious, and the left side was involved in active convulsive movements. The face was flushed, the pulse 100, the respirations 24. The head was turned to the right, the right arm flexed across the chest, with the hand closed, the right leg extended; both were motionless. The right pupil was dilated and slowly reacted to light; the left was contracted and failed to react. There was no vomiting or hemorrhage from the nose, mouth or ear.

August 30. The temperature was 99°; the pulse 70, full and bounding; the respirations normal. The right pupil appeared normal; the left was still contracted, with a feeble reaction to light. The right arm became relaxed, and when raised fell to the side. The left arm and leg still displayed a tendency to spasm. In the afternoon the patient muttered a few indistinct words. He took medicine given to him.

31st. The paresis of the right arm and leg became more decided. The left pupil was still contracted. The knee-jerk on the right was enfeebled, on the left exaggerated.

September 1. The patient could, when aroused, answer questions in an indifferent manner.

2d. There were ptosis on the right and relaxation of the same side of the face.

4th. The temperature was 101°, the pulse 104, the respirations 20. The patient made no reply to questions.

5th. The temperature was 105°, the pulse 135, the respirations 36. There were no additional developments prior to death.

The man had been a syphilitic. During his illness he had passed an excess of urine. The bowels were regular.

At the autopsy, evidences of a contusion over the left eye were found. The lungs were congested, the heart fatty, the liver fatty and congested. There was chronic parenchymatous nephritis, with acute congestion of the kidneys. The cerebral meninges were congested. Over the entire right hemisphere of the cerebellum was found a clot formed of blood poured out from rupture of the middle meningeal artery, the result of a fracture extending from the right foramen lacerum medium through the foramen spinosum, with separation of the squamo-sphenoidal suture as high as the pterygoid ridge. The interesting question arises: Why was not the hemiparesis on the left side?

CURRENT LITERATURE.

THE INFLUENCE UPON THE CHILD OF MEDICAMENTS ADMINISTERED TO A NURSING MOTHER.

SCHLING (*Revue Obstét. et Gynécol.*, No. 4, 1891) has made a series of observations upon children, to the mothers of whom various drugs were administered. If the infant was not put to the breast sooner than an hour after the administration to the mother of from thirty to forty-five grains of sodium salicylate, the salicylate was found in the urine of the infant. At the expiration of twenty-four hours not a trace could be found. If the infant was put to the breast too soon after the administration of the drug, not even a trace could be found. The elimination of the medicament took place simultaneously in both mother and infant.

Similar results were obtained with potassium iodide. In the infant, the elimination lasted for seventy-two hours; in the mother for forty-four hours. At the end of twenty-four hours, the mother's milk still contained potassium iodide.

When potassium ferrocyanide was administered, the reaction was evident in the maternal urine, but no trace could be found in the fetal urine.

When iodoform was for a considerable time employed by topical application to vaginal and vulvar wounds in women in childbed, iodine was, as a rule, found in the milk and maternal urine, but not constantly in the urine of the fetus.

The transmission of mercury to a nursing child through the milk is slight and may be irregular.

The influence of the nourishment of the mother, that is the food ingested, appears to be *nil*. Nurses may

with impunity be permitted to partake of acids (lemon, vinegar, etc.).

Of narcotics, the ingestion of the tincture of opium, in doses of from twenty to twenty-five drops, has in some instances been followed by prolonged sleep on the part of the infant, while in others neither prolonged sleep nor constipation was observed. After the administration of morphine hydrochlorate, in doses of one-eighth, one-sixth, one-fourth, and one-third of a grain, nothing in particular was noted in the child. Chloral, in doses of from fifteen to forty-five grains, brought about sleep of moderate duration in the case of the mother, without any action upon a strong and vigorous infant. When atropine sulphate was administered in medicinal doses subcutaneously to the mother, dilatation of the pupil was observed in the infant, disappearing in twenty-four hours.

In a large majority of cases, the milk of a woman with fever has no influence upon her infant. Except in rare instances of grave illness in the mother, with a persistent temperature of 40° C. (104° F.), the infant does not present the symptoms of the mother. In a case of mammitis, the passage of micrococci from the breast of the mother to the digestive apparatus of the infant has been observed.

PHENOCOL HYDROCHLORATE; A NEW ANTI-PYRETIC AND ANTI-RHEUMATIC.

PHENOCOL hydrochlorate, the hydrochlorate of amido-acet-para-phenetidin, is a white, finely crystalline powder, soluble in about sixteen parts of water at a temperature of 62° F., the solution having a neutral reaction. When crystallized out of hot water the crystals resemble the cubes of antipyrine; when crystallized out of alcohol, in which it is readily soluble only when hot, the crystals are needle-shaped. Pure phenocol is separated from a solution of the salt by ammonia, potassic hydrate and potassic carbonate. It appears as white felt-like crystals, with one water of crystallization discharged. The melting point of the water-holding base is about 203°, when deprived of its water, 212° F. The hydrochlorate is preferable for use on account of its solubility.

According to Professor Kobert, of Dorpat, phenocol is non-poisonous even to the blood. Professor von Mering gave 22 grains to a rabbit without producing any symptoms. His observations upon patients with typhoid fever and pneumonia have shown that phenocol hydrochlorate is a suitable antipyretic, which in doses of 15 grains lowers the temperature about two degrees, and has not been observed to give rise either to collapse or to cyanosis. Sweating was not more decided than after large doses of antipyrine. Fifteen grains of phenocol are said to lower temperature as effectively as 20 or 30 grains of antipyrine, or 10 or 15 grains of phenacetin. The hydrochlorate is also said to possess power as a nerve and as an analgesic in neuralgias.

Hertel has employed the hydrochlorate as an antipyretic and anti-rheumatic. He gave it in solution in water in doses of from 7½ to 15 grains. In four cases of phthisis, in which the remedy was employed as an antipyretic, the temperature was sometimes lowered, but not very decidedly; more frequently it was unaffected. The remedy, however, caused no disturbance of the circula-

tion, respiration, or digestion. When the temperature was lowered, the effect was transient; the subsequent rise was unaccompanied by chill or sweat. The urine presented a dark-brownish to blackish color, which deepened on exposure to the air. Indican and hydrobilirubin were always present. The adding of a solution of ferric chloride caused the dark color to become still deeper, concentrated sulphuric acid again somewhat clearing up the color, which did not disappear, but by transmitted light displayed a peculiar greenish hue.

In three cases of acute articular rheumatism, phenocol hydrochlorate appeared to be of decided service in lessening the joint-pains, after antipyrine, sodium salicylate, phenacetin and antifebrin had failed; but it exerted no influence upon the temperature. In a severe case of gonorrheal rheumatism, it had no effect either upon the fever or upon the joint-trouble. No injurious action upon the kidneys was evident. The remedy appears to be speedily excreted—at least the reaction of the urine with ferric chloride no longer occurs twelve hours after the administration of the phenocol hydrochlorate has been withdrawn.—*Deutsche medicin. Wochenschrift*, No. 15, 1891.

THE TREATMENT OF RHACHITIS WITH PHOSPHORUS.

VOUTE (*Bull. Gén. de Thérap.*, No. 14, 1891) states that while it is true that the calcareous salts are indispensable during the period of bone-development, it is also true that rachitic bones are deficient in lime-salts, and that the stools of a rachitic child contain a much larger quantity of lime-salts than those of a healthy child; it would be unfair to conclude either that the nourishment contained a deficiency of the salts of lime, or that these were dissolved by the lactic acid formed by some derangement of digestion. The constant presence of pure lactic acid in the normal stools of healthy, nursing infants has been demonstrated. Besides, rachitis is sometimes found in infants well nourished and raised hygienically. The inference is that in consequence of the existence of rachitis the lime-salts are not assimilated in sufficient quantity. This is in accord with the view that the activity of the plasma occasioned by the great formation of bloodvessels retards the deposit and favors the solution of the lime-salts.

It is held that the characteristic of rachitis is found in an abnormal hyperemia and formation of bloodvessels in the bone-forming tissues, and that the symptoms are but mediate or immediate sequelæ. Among the causes that lead to such a condition are abnormal processes in the stomach, which are apt either to give rise to the excitants that provoke inflammation, or to irritate the bone-forming tissues, as a result of which there is an increased proliferation of these tissues, followed by the development of bone deficient in lime-salts.

It has been demonstrated that small doses of phosphorus exercise a beneficial influence upon the structure of new bones. This suggested the employment of phosphorus in the treatment of rachitis. The results have been extremely gratifying.

Adopting the suggestion of Hénoc'h that the dimensions of the large fontanelle afford the simplest method of determining the existence of rachitis, Voute examined

the fontanelles of all infants brought to his polyclinic. For this purpose he used graduated callipers. A great difference exists between the dimensions of the fontanelle in healthy infants of the same age, so that it is difficult to establish a mean. The measurements of the fontanelles were used as an index of the effects of treatment. Of 1146 cases, up to the age of twelve years, treated at his polyclinic for children, 132 were cases of rhachitis—a little more than 11½ per cent. In 40 of these 132 cases a sensible amelioration resulted from the employment of phosphorus. In 10 cases the results were uncertain or the duration of the treatment protracted. In 13 cases intestinal disorders were produced and the remedy had to be withdrawn. Forty-two children did not return after the first prescription, and cannot, therefore, be considered, while in 27 cases a different treatment was pursued. The formula employed contained $\frac{3}{100}$ grain of phosphorus in 3ss of cod-liver oil, administered night and morning.

DIAGNOSIS OF MALARIA IN INFANTS.

HOCHSINGER maintains that intermittent fever is far more frequent in sucklings and young children than is generally supposed, particularly in Vienna. Children during the first two years of life are especially prone to it. The observations of Hochsinger confirm those of the French authors, who state that the disposition to malarial infection is incomparably greater in childhood than at any other period of life. Intermittent fever in children is rarely diagnosed, because the disease runs an atypical course. The initial chill is always, the sweat nearly always, absent in sucklings and young children; intermissions between the febrile attacks are not clearly marked, the temperature remaining from one to two degrees higher than normal; the febrile curve is more like that of a remittent than an intermittent fever.

The digestive and respiratory systems of the child soon show the effects of the disease. The child runs down, loses flesh, becomes anemic, and of a sallow color. The symptoms may be ascribed to gastro-intestinal catarrh, or to dentition; or tuberculosis may be suspected. If quinine should be given, improvement and recovery take place with surprising rapidity. Mild forms of the disease may disappear spontaneously, or under the influence of a change of climate.

Prior to the discovery of the plasmodium of malaria Hochsinger frequently made the diagnosis by a study of the temperature-curve, the condition of the spleen, the color of the skin, the history of the case, the restlessness and the manifold nervous symptoms, coupled with the knowledge of residence in a neighborhood possibly malarial. In such cases, from seven to twelve grains of quinine were given, and nearly always effected a cure. Since systematic examinations have been made the plasmodium has been found in twenty-four cases of intermittent fever in children. Half of the cases were in sucklings, the youngest being three months old.

To examine the blood for plasmodia, cover-glass preparations are made, dried in the air, and subsequently fixed by immersion for twenty or thirty minutes in a mixture of equal parts of alcohol and ether. They are then stained with a solution consisting of about three ounces of a strong, aqueous solution of methyl-blue, to which a few drops of absolute alcohol and then seven

and a half grains of eosin dissolved in water are added. The solution is then sterilized by boiling for half an hour in a flask, and preserved in a tightly-corked bottle. For use, a few drops are filtered into a watch-glass, and the prepared cover-glass, inverted, is permitted to float on it for at least ten or fifteen minutes, after the solution has been previously warmed. The cover-glass is then well washed in water, dried between filter-paper and then over a spirit lamp, and finally mounted in Canada balsam. The red blood-cells are stained rose, the nuclei of the leucocytes a deep dark-blue, and any plasmodia in the blood are stained a delicate sky-blue.

The segmented bodies that exhibit ameboid movements were never absent in sucklings. Though sought for in other than malarial diseases, the plasmodia were never found.—*Wiener medicin. Presse*, No. 17, 1891.

LOCAL AND GENERAL ANESTHESIA.

GRANDCLÉMENT (*Lyon Medical*, No. 12, 1891) states that local anesthesia usually suffices for the performance of minor operations, such as the relief of ingrowing nails, opening of abscesses, enucleation of small, superficial tumors, or to overcome the circumscribed pain of inflammation or of neuralgia. Several methods have been proposed for the purpose, but all are not equally valuable or secure.

1. *Anesthesia by congelation with the aid of a refrigerant mixture of salt and ice* was the only method used twenty-five or thirty years ago; to-day it is almost abandoned. It is painful and time-consuming, and is best applicable to the extremities, the toes or fingers, which can be plunged into the mixture. Besides, ice cannot always and everywhere be obtained.

2. *Spraying with ether* originated with Richardson twenty-five years ago. It is superior to freezing with ice; it requires a special apparatus and protracted application, and is sometimes quite painful.

3. *Spraying with ethyl chloride* has recently been recommended. Ten grams of ethyl chloride contained in a small glass bulb, terminating in a capillary tube that has been sealed in the flame of a lamp, are vaporized by the heat of the hand (ethyl chloride vaporizes at +10° C. (50° F.)). A fine spray escapes when the tube is broken. In a short time the area sprayed presents a white appearance and a degree of anesthesia sufficient to open deep abscesses and to perform other minor operations.

4. *Hypodermatic injections of cocaine* induce phenomena of profound intoxication in certain individuals, even when small doses are employed. Unpleasant symptoms sometimes follow the instillation of cocaine into the conjunctival sac. In the violent periorbital neuralgias that are provoked by certain affections of the eye, Grandclément has obtained good results from injections of cocaine and antipyrine in association. He believes that the edema and vascular stasis resulting from the injection prevent too rapid absorption of the cocaine. The same end is attained by applying an Esmarch bandage to the part before the injection of cocaine is made. Grandclément has observed that the anesthesia produced by the mixture of cocaine and antipyrine persists for several days.

MEDICAL PROGRESS.

Circular Enterorrhaphy.—PAUL (*Liverpool Med.-Chir. Journ.*, July, 1891), in cases in which end-to-end apposition is indicated, employs a decalcified bone-tube from an inch to an inch and a half long, from one-half to three-fourths of an inch in diameter, and from one-sixteenth to one-eighth of an inch thick, the lower end of which is perforated for suturing the proximal end of the bowel to it. A double thread, carrying a needle, is fastened to the tube to facilitate invagination. The tube is entirely introduced into the proximal portion of the bowel, the free margin of which is sutured to the tube through the perforations by means of fine chromicized catgut. Care should be taken to include in the suture the severed edges of the mesentery. Next, the needle armed with the double thread is introduced on a director into the distal segment of bowel, and, at a distance of three inches, made to emerge through the wall of the intestine. Then the distal end is sutured all around to the proximal end through the muscular and serous coats by means of chromicized catgut, special attention being again given to the mesentery. An assistant now makes traction on the double thread and resists the operator as he draws the distal end of the bowel back over the tube, thus invaginating the proximal end. The parts are retained in position by a few Lembert sutures, one on either side of the mesentery, and others as needed. The double thread is finally drawn tight and cut off short.

Pathological Anatomy of Rheumatic Facial Palsy.—MIN-KOWSKI (*Berliner klin. Wochenschr.*, July 6, 1891) reported the case of a laborer, twenty-seven years old, with paralysis of the muscles supplied by the terminal filaments of the left facial nerve, following exposure to a draught. Fluids dribbled from the corner of the mouth; there were pain in the ear and derangement of hearing; the tip of the tongue deviated slightly to the right side; there was paresis of the left half of the soft palate; the uvula deviated to the right; there was moderate tenderness in the right parotid region, but no other derangement of sensation. The sense of taste was impaired in the anterior portion of the left half of the tongue, with a sense of dryness in the left half of the mouth; there was epiphora on the left; acuteness of hearing was heightened on the left. Degenerative reactions in nerve and muscle had begun. A diagnosis of rheumatic palsy of the facial nerve was made. Under treatment some improvement took place. The patient, however, committed suicide by taking hydrochloric acid. The autopsy revealed advanced neuritic degeneration in the peripheral distribution of the nerve, from the geniculate ganglion downward, no evidences of an inflammatory process in the bony canal for the nerve or in the neurilemma being discovered.

Rheumatoid Arthritis.—SIR DYCE DUCKWORTH (*Liverpool Med.-Chir. Journ.*, July, 1891) accepts a neuro-humoral pathology for most features of gout and gouty ailments, and by analogy for rheumatism. In both he finds a dominant nervous element. In rheumatoid arthritis, however, proof of any humoral element is wanting. The relation of this disorder to rheumatism and to gout is inconstant. Sir Dyce Duckworth main-

tains, with others, that the articular lesions are peripheral manifestations of a degenerative change in a hypothetical center for the joints, situated in the medulla. The view of the nervous origin of rheumatoid arthritis is borne out by the results of therapeutics—iron, cod-liver oil, arsenic and nutrients constituting the best means of treatment.

Interstitial Injections of Corrosive Sublimate in Carcinoma of the Breast.—CHÉRON (*Revue Médico-Chirurg. des Mal. des Femmes*, July, 1891) has reported three cases of advanced carcinoma of the breast, with involvement of the axillary glands, in which excellent results attended interstitial injections of corrosive sublimate. Fifteen minims of a 1:1000 solution were injected two or three times a day, with vigorous antiseptic precautions. The injections occasioned little pain; in no case did suppuration occur.

The Mortality Among Breast-fed Infants.—SABATIER (*Lyon Medical*, 1891, No. 24) has observed that the mortality of infants nursed by women who for one reason or another use but one breast for nursing is considerably higher than in infants nursed from both breasts. In thirty-two of the former, seen in public service, the infantile mortality was 48 per cent.; in the same number of the latter, under similar conditions, the mortality was but 28 per cent.

To Detect Tubercle Bacilli in Sputum.—KROENIG (*Berliner klin. Wochenschrift*, July 20, 1891) has recommended a modification of the method of Biedert, as a result of which the otherwise necessary delay of a day or two is obviated. The sputum, liquefied by the addition of a dilute solution of soda and boiling, is evaporated in a centrifugal apparatus. In the sediment that remains bacilli are more readily found than if the original bulk of the sputum were examined.

Miners' Nystagmus.—In a second communication upon the subject, SNELL (*British Medical Journal*, July 11, 1891) presents some evidence demonstrating that the nystagmus seen in miners is not at all dependent upon the use of safety lamps, but that the derangement is only observed in those whose special work necessitates their assuming constrained positions, upon which it is shown the ocular oscillation is dependent.

Non-pathological Albuminuria.—WINTERNITZ (*Zeitschr. f. physiolog. Chemie*, Bd. xv.) treated by evaporation and precipitation the urine obtained from a number of apparently healthy individuals, in which albumin could not be detected by the ordinary tests, and was unable to find albumin. As a result, he concludes that normal urine does not contain albumin.—(*Centralb. f. med. Wissensch.*, July 11, 1891).

Purulent Inflammation of the Thyroid Gland following Pneumonia.—MARCHANT (*Wiener med. Presse*, July 12, 1891), at the French Congress of Surgery, reported the case of a woman seventy-two years old, in which, three weeks after an attack of pneumonia, a purulent inflammation of the left lobe of the thyroid gland appeared. In the pus evacuated by incision, pneumonia cocci were exclusively found.

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HUMAN LIFE UNDER DENIED SENSATION.

THE writer once experienced an odd series of feelings that brought vividly to mind the fact that life and emotion and happiness are compatible with great differences in and deprivations of ordinary mental stimuli. A social gathering was going on in a large hall, and the sounds of excellent music, dancing, laughter, and gayety, came from this room where a hundred or more happy folk were passing happy hours. Upon opening the door and being ushered into the hall the room was found to be as dark as midnight. Not a thing could be seen. It was the social hour of the inmates of an institution for the blind! The first uncanny, creepy feeling was soon dissipated by the thought of congratulation that indomitable mind and spontaneous emotion, though deprived of light and vision, could still find satisfaction and play through the medium of indirect sensation. Soul still conquered sense!

The same thought is exemplified and emphasized by a consideration of the report of the Convention of Deaf-Mutes lately held in Allentown, Pa. One is apt thoughtlessly to pass over the beginning of the report, that says, "The meeting was called to order by the president, who rapped vigorously on the desk to attract the attention of his audience."

An audience of deaf-mutes called to order by a noise! Those who see a blind man tapping the street in front of him as he walks are apt to think that this is solely to avoid objects that the cane may strike. It is also to avoid objects that the cane does not strike—because to the blind man's ears and hand there is a *timbre* from blows upon the pavement near its edge, near posts or steps, that is very different from the resonance when the blow is not near such objects. It is said that blinded bats are able to fly unharmed, avoiding objects in their flight by means of the perception of an increase of barometric pressure of the air close to those objects—so sensitive to variations of pressure is the expanded interdigital membrane. (The experimental blinding of the bat, however, was not necessary, because millions of bats winter in Mammoth Cave, miles from the faintest ray of light.)

A suggestion is indirectly aroused by this fact as to the "relaying," if one may so speak, of crude and faint stimulation by the mechanism of the nerve-ganglia and centers. There is a nervous device that reinforces and transforms whilst also repeating the subtle, weak, and in themselves meaningless, hints of the external world that we call sense-impression. It is the living prototype of the electrician's "relay" and microphone combined. Thus all man's mechanic devices are but poor imitations and repetitions of what Life's vital forces have long ago brought to wondrous perfection!

In the deaf-mutes' convention prayer was said, the roll called, addresses made, business conducted, and long sessions held—all in the sign-language—all in silence! "The amended constitution and by-laws were adopted *after a lively debate*." If present, our blind friends would certainly have thought the meeting very strange and stupid. But the success in raising funds for a proposed home for aged and infirm mutes, and the discussion of other worthy objects, made the gathering a very interesting one for the attending delegates.

According to the Paris correspondent of the London *Times* the method of analyzing motion by the chronophotograph, which has been so happily applied by M. MAREY in the case of moving animals, such as horses running or birds and insects in flight, has recently been employed by M. G. DEMENY, a preparator at the physiological station of M. MAREY, to examine the movements of the lips in speaking. He has obtained results which show that the form of the mouth is quite different for the different articu-

late sounds. With these photographs combined in a zoetrope he has reproduced the movements of the lips by synthesis. An ordinary person finds it difficult to read the words by the animated pictures; but a deaf-mute who has been accustomed to read from the lips of a speaker, found it easy to do so from the photographs. A young pupil of the National Institute of Deaf-Mutes in France could read the vowels and diphthongs as well as the labials. The first experiments were, of course, not all that could be desired; but, in bringing the matter before the French Academy of Sciences, M. DEMENY expressed the hope that in continuing his researches he would be able to develop a new method of educating deaf-mutes by sight from more perfect photographic images. Obviously a magic-lantern lecture might be delivered to an audience of deaf-mutes in this way.

The encouraging and deeply suggestive fact of rescuing the faculty and power of speech in these deaf-mutes is one that must command the sympathy of all. There is no limit to the ingenuity of Life and to her triumphs over adverse circumstances and deprived stimuli. We have all read of another striking example—very different in kind, of course, but illustrating the same great truth. One of England's greatest statesmen was blind; so was a great numismatologist; and another of her great men, a hunter and rider of unexampled daring, a peerless sportsman, an excellent business man, and active administrator, had neither arms, hands, legs, nor feet. One is reminded of EMERSON'S cool answer to the Millerite who excitedly told him that the world was to come to an end that day: "Oh, well!" said the philosopher, "we can get on very well without it."

It would seem that if loss of sight were added to loss of hearing and speech, naught but tragedy and melancholy could be left, or that the routine life of the lowest functions of nutrition, etc., would persist. But there are few happier and brighter-minded people than LAURA BRIDGMAN was and than HELEN KELLER is. Another, a man likewise deprived of these great avenues of influence from and communication with the external world, without which life to us would seem so barren, travelled all over the United States alone, raised a family, and lived out his period of brave and satisfied life. He could talk with anybody by means of the ingenious device of tattooing the English alphabet upon different parts of his hand. Words and sentences were spelled out and

recognized by the positions of the letters touched. The emotional life of these imprisoned souls, cut off from so many relations and avenues of interchange with the external world, must be all the more vivid and hypersensitive. A coarse jar of the hyper-esthetic receiving end-organ of sense is transformed into a rude thunder by the highly attuned and delicately responsive microphone of the inner sensation-making mechanism. Thus the possibility of causing sharp sorrow is a necessary concomitant of the ease of eliciting joy. It is the glory of civilization to care for such and shield them from pain, and it is the delight of medicine to minister to them its healing. It is hard to sympathetically understand and realize the inner life of these almost windowless minds. How strange must seem to them the dreams and somnambulisms of never-to-be awakened emotions, the dumb reaching out toward reality of denied possibilities, the unsatisfied hungerings of imprisoned sensibilities. Their minds must be thrilled by dim hereditary echoes and the far-away caresses of ghostly ancestral hands. With what pathetic half-responsiveness do these shut-in souls catch the shimmer of long-departed life, that comes to them like the last faint evening flushings reflected from distant mountain-tops to valley-dwellers that are in the night.

A RATIONAL MEDICAL NOMENCLATURE.

THERE are too many proper names in medical nomenclature. The sooner a change is made, the better. In the selection of a name for an object, a condition, or a disease, descriptiveness should be aimed at. It may, however, be interposed that knowledge is at first crude and that names descriptive at one period of history may convey no adequate idea at a later period. While it must be admitted that this objection is supported by an element of truth, still in the selection of a name it were more logical to choose one that carries with it an idea than to designate a condition after its discoverer. If this conception were adhered to there would be fewer contests for priority of description.

No department of science is more ready than medicine to bestow appropriate credit upon its deserving members, but there are other ways of doing this than by obstructing the progress of knowledge by imposing upon laboring memory the additional burden of a mass of meaningless names. To see that honor and distinction are awarded to

those to whom it is properly due should be the duty of historical medicine.

As knowledge grows broader and more profound, the compound becomes resolved into its component elements. What at first appears simple is discovered to be complex. It is at this stage that we have arrived as regards so-called Bright's disease. While we do not know all there is to learn concerning the various morbid conditions of the kidney, it has long since been demonstrated that what was originally described as Bright's disease is not a single condition, but that Bright's disease represents a variety of different pathological lesions. It is on this line of thought that DELAFIELD (*American Journal of the Medical Sciences*, October, 1891) at the recent Congress of American Physicians and Surgeons proposed to discard the designation Bright's disease as no longer serving a useful purpose. He divides the diseases of the kidney into congestion, inflammation, and degeneration. Each of these may be acute or chronic. Acute nephritis may be exudative, or productive, or diffuse; chronic nephritis may be productive or diffuse, with or without exudation, suppurative or tuberculous. The degenerations are all secondary. These designations are sufficiently expressive; they meet all the indications for the present; they are elastic and will permit of extension as occasion may warrant.

The medical profession will always hold in deepest reverence the memories of such men as RICHARD BRIGHT, but let us make the nomenclature of medicine rational.

LOVERS OF HYPOCRISY.

THERE is one aspect of the tempest in a teapot that seems to have been aroused among the Hahne-mannian knights by the criticisms of THE NEWS—one important aspect, that is deserving of passing notice. In planning the "boycott" those with any approximate sincerity of conviction should ask themselves if in the long run a hypocritical enemy is not more to be feared than a frank enemy. Is open-field or ambush fighting the most indicative of civilized warfare and honorable character? Do they imagine for one foolish instant that those "allopathic" journals and editors and publishers that are silent, evasive, compromising, or even flattering to them, have any opinion of their peculiar medical creed and practice essentially different from that frankly outspoken by THE NEWS? Do they imagine for one foolish instant that the silence, the

evasion, the offers of compromise and flattery, represent anything but "policy" cloaking concealed contempt? An honest man prefers an honest enemy, but the subconsciousness of error makes one beg for dishonest friends. And the dishonest friend is always on the lookout for dupes.

SOCIETY PROCEEDINGS.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

First Annual Meeting, held at Philadelphia, September 24, 25, and 26, 1891.

(Continued from page 471)

FIRST DAY—SEPTEMBER 24TH. EVENING SESSION.

DR. HORATIO R. BIGELOW, of Philadelphia, read a paper entitled "Eight Months' Work at the Free Dispensary for Women," in which he said that for purposes of observation and study, individual clinics were a necessity, to afford a wider range of observation and a larger opportunity of weighing evidence than can be obtained by a fluctuating private practice. Refinement, scrupulous care, and precision, are requisite in formulating a diagnosis.

At the dispensary, 75 new cases had been treated, between 600 and 700 applications having been made. Fifty-eight punctures were made in 15 cases of uterine fibroids. Three tumors were subperitoneal, the others mural. The mean current-strength used for vaginal applications was 35 m.; for punctures, 85 m. In simple cases of salpingitis and salpingo-ovaritis, symptoms are relieved by vaginal applications, but cures are never accomplished. In simple, uncomplicated cases, in which the tubes are not constricted, and when the dribbling into the uterus has not been interfered with, intra-uterine applications, supplementing the vaginal, do have a marked influence for good. The cases of large tortuous tubes, with thin and distended walls, irregular swellings, denoting pus-pockets and pronounced cachexia, demand surgical interference. Electricity can do no possible good—it may do much harm. Hence one object of a well-conducted clinic is differentiation—to know what cases to treat, to realize that there is such a thing as over-treatment, and that electricity is not a panacea for all female pelvic disorders. Some other things are learned. Many tumors appear benefited symptomatically only. Soft myomata, fibromata undergoing degeneration, and subperitoneal tumors, are not, as a rule, benefited anatomically. In one case, a large subperitoneal fibroid has been punctured a dozen times through the vagina, without apparent diminution of the growth, and without decided change of symptoms. Locomotion is difficult and painful. This was an unfortunate test-case, because subperitoneal growths, being far out of reach, resist the action of the current, and because the patient's surroundings are most lamentable. She is a type of poverty. She lives in filth, is insufficiently nourished, and drinks to excess. Confidence in any therapeutic measure should not weaken one's honesty in the recapitulation of results. In this case electrolytic punctures have been tried with three needles through the abdominal parietes, without

apparent diminution of the growth of the tumor. It has changed its form from a prominent dome-like swelling to a broad, lobulated lateral mass, somewhat lower down in the pelvis. While abdominal puncture might, theoretically, be proper, the results of operation are against its use. When the abdominal walls are thin and transparent, when the intestines do not overlies the tumors, and the bladder is at a safe distance, abdominal puncture may be considered.

All the cases of fibroid treated were made comfortable. No tumors have disappeared; two are reduced in size. Under better hygienic conditions and regular treatment better results can be obtained than is possible in a clinic. Many cases come irregularly for treatment, and are not under constant observation, and all are badly nourished and improperly cared for. Small intra-mural tumors, hard, and not very painful, that are taken in hand as soon as noticed, always do well under the buried negative puncture, and are made to disappear. Inflammation of the adnexæ, old chronic salpingo-ovaritis, demand the greatest possible care and dexterity in their management.

Of the first importance is accurate diagnosis. It is a *sine qua non* of success that the electro-therapeutist be a thoroughly competent gynecologist, if he intend limiting his practice to the diseases of women. This end can only be attained after years of work with ample material, and it would be well for the science and art of medicine if a more enlightened view of pathology should be conjoined to it. The clinician should know all about the processes that give rise to abnormal conditions, that he may have a clear conception of the limits and degree of acute inflammations, and of the nature and extent of degenerations. Otherwise he gropes in the dark, and his labors will be in vain. Pathology is far too commonly neglected. In acute disease of the adnexæ, the introduction of a sound unless in competent hands is apt to create mischief. Not only is the lining membrane of the tubes in a hyperemic and hyperesthetic condition, but the whole endometrium also, and it is bad practice to resort to any measure that will intensify such pathological processes. The same conditions exist in some chronic states. Cases in which active inflammation of the peritoneum has been reported after application of the intra-uterine current have probably been so caused. In such cases treatment may be begun with vaginal applications of great delicacy, until the patient's uterus becomes tolerant of a foreign body; in all cases of extremely tortuous or constricted tubes, interference should be refrained from. Dr. Bigelow expressed firm faith in the value of electricity in gynecology, but he realized that incompetence, immoderate enthusiasm, and faulty differentiation are to be avoided. Electricity is employed in the treatment of the diseases of women by those who have not the requisite experience or the modesty for its successful employment. Faulty complications do not happen to competent electro-gynecologists.

Any inflammatory process in the pelvis will be followed by some effused lymph, which may form adhesions. Most tumors are complicated by adhesions. An objection to electro-therapeutics based on this ground would not hold. The work of abdominal surgeons must not be judged from imperfect and inadequate data. Many tubes and ovaries are removed without sufficient cause,

but these instances are not often from the record-book of competent abdominal surgeons, but are usually the belongings of a young ambition, anxious to climb. Surgery is handicapped with incompetent practitioners just as electro-therapeutics is, and it is not one bit more logical to lay all miserable failures and mistakes at the door of honest surgery, than it would be for surgeons to conjure all sorts and conditions of doubts, and to hold the responsible intelligences among electro-therapeutists responsible for engendering them. It must be remembered that eminent surgeons see a class of cases in large numbers that rarely, if ever, come to smaller clinics—cases in which nothing but operative interference could be of the least service. So it is not to be wondered that surgeons arise in their wrath when lesser lights, who know little or nothing of such aggravated forms of disease, dispute the necessity of operating. In some cases neither electricity nor expectancy can accomplish aught; in others, the employment of electricity would be most pernicious; and there are now and always will be cases that will not be benefited by electricity. One of the greatest dangers is the overclaiming of young and restless men, and the unequivocal condemnation of honest intelligent surgery by those that know little of either abdominal surgery or electro-therapeutics. Personalities are offensive, and are not arguments. Honest surgeons do not rail at intelligent electro-therapeutists, but they do object to inexperienced gynecologists and unlettered electro-therapeutists claiming marvels for a method of which they can know little or nothing—and they have a right to object to the criticism of men that know nothing of pathology. The tone of recent discussions in special societies is to be deprecated. Surgeons must not impugn the motives of earnest electro-therapeutists. A study of electricity is fraught with difficulty, and is not to be had for the asking; there are very few operating surgeons who know anything about it. Therefore they are not competent witnesses.

DR. WALLING, of Philadelphia, having seen many of the cases alluded to, stated that nearly all of the cases of fibroma were in persons who had been poorly nourished. If such cases were properly nourished, if they could be placed in a hospital on a nourishing diet, they would be in much better condition for treatment, with prospects of partial or complete recovery. The trouble seems to be a lack of nutrition. If Nature does not have the proper supply of nutritive elements, she must build of what she does get, so that a lower grade of nutrition results.

DR. HAYD stated that he had no doubt but there is some harm done by the use of electricity, but not more than there is by the use of other powerful remedies, such as strychnine, morphine, and similar drugs.

The young man just from college, with no special training in gynecology, should be cautioned that he has a powerful agent when he uses electricity, and that he may do a great deal of harm if the agent is not properly employed and a great deal of good if it is properly employed; he should be enjoined to make as few intra-uterine applications as possible. Years ago, when the sound was introduced without proper consideration, its influence was almost as baneful as is that of electricity to-day in the hands of unscientific men.

If there is an acute or a subacute condition, and the

electrode is not introduced with the greatest care and the greatest cleanliness has not been exercised, an inflammation may be lighted up, with all its attendant dangers.

In reply to an inquiry, DR. BIGELOW stated that he had treated two cases of malignant disease of the uterine adnexa. In one electricity did no good, but rather aggravated the condition; in the other, in which the malignant disease was confined to the cervix, the results were brilliant. If the recent knowledge of the pathology of carcinoma is correct—that is, that it is simply a normal cell exaggerated in growth and not a distinct cell, but simply a normal growth with a normal composition, displacing the normal cells, with subsequent degeneration—then the galvanic current should be of great use. Malignant growths of the adnexæ are not benefited in the least by galvanism, but are rather aggravated.

DR. MASSEY referred to a case in which a large sarcoma of the adnexa was greatly helped by electricity, being much retarded in growth, although not cured.

DR. ROBERT NEWMAN, of New York, read a paper on "Electricity in Carcinoma," in which he presented the various modes in which electricity has been used in the treatment of carcinoma, and showed that undoubted cures had been reported. Four different methods have been used: First, Galvanism; second, Electrolysis; third, Galvano-cautery; fourth, a combination of two of the preceding.

Galvanism has been applied externally with pads or sponge electrodes and (the interrupted current) with needles. The external application by the galvanic (constant) current with two sponge electrodes to the skin on or near the tumor has not met with success; it seems only to have stimulated the carcinomatous cells to greater proliferation, and thereby hastened the fatal termination.

In the treatment of carcinoma by electricity *electrolysis* has been mostly used, and is best known. It differs widely from the first method of galvanism, which is expected to destroy the carcinoma by a strong mechanical action. Electrolysis, on the other hand, either destroys, causing decomposition by its chemical action, or causes absorption, according to the strength of the current employed. The art of applying electrolysis successfully consists in using the correct strength of electric current, applying the respective poles in the right place, selecting the size, shape, and material of the electrode, and regulating the duration and intervals of sittings. A mild current can effect absorption only—a strength of from 5 to 30 milliampères, and even more, may be used, according to the requirements of the case. A strong current of from 25 to even 200 milliampères (and some operators have used even more) will destroy tissues to such a degree that the tumor may slough off as a dead mass. A good rule is to apply the current not stronger than necessary to accomplish the desired object.

It is not yet decided whether or not there is an inter-polar electrolysis. It is only certain that the decomposition by electrolysis is greatest at and around the terminus of the poles. From experiments made by Dr. Newman it seems that the electrolytic action extends around the needle in a radius of from one and a quarter to one and a half inches. Concluding that electrolysis is capable of destroying carcinomatous cells, and that it

causes specific decomposition at the pole and within a radius of one and a half inches, if needles are inserted in a tumor at a distance of two and a half inches it may be expected that the electrolytic action will affect the interval between the needles and destroy the integrity of the carcinomatous cells. Dr. Newman has, therefore, operated principally by two methods. If absorption by electrolysis was intended, the whole tumor was electrolyzed in sections with needles connected with the negative pole—one, two, or more needles being introduced into the tumor at a time—while the positive pole was applied as a large pad outside on the cuticle or near the tumor. Weak currents are employed. An anesthetic is not required. In the second method both poles are represented by needles. The positive pole (a single needle) is placed in the center of the tumor, the negative needle or needles at the circumference of the tumor or even beyond, but near the margin of the tumor. Destruction and sloughing of the diseased mass takes place.

Dr. Newman began the electrolytic treatment of carcinoma in 1874, and has since had considerable experience. The results varied: some were failures; in some cases the patient's life was prolonged; there were also cures, some patients remaining well without any sign of recurrence of the growth for many years.

The treatment of carcinoma with the *galvano-cautery* has been practised by many, but it seems that Dr. J. Byrne, of Brooklyn, has had the greatest experience and success. Of 367 cases so treated, there was no return of the disease in from two to eight years in 153 cases.

Finally, electricity may be employed in the treatment of carcinoma by a combination of any two of the methods already considered. Most commonly the applications of the electrolytic and of the galvano-caustic effect of the battery are combined in the same case.

How is electricity expected to cure carcinoma? 1. Strong currents of galvanism are expected to destroy the carcinomatous cells by a mechanical action. 2. A removal of carcinomatous tumors by extirpation (amputation) is effected by the galvano-cautery. 3. Electrolysis with a mild current facilitates absorption by inducing chemical decomposition. 4. Electrolysis with strong currents acts by its destructive influence. Whichever method is used, it must be applied thoroughly and systematically, removing all the carcinomatous cells. Success can only be expected in the earlier stages of the disease, when the malady is local and the malignant mass is concentrated in one small tumor. If the carcinomatous cells are distributed in different parts of the body, and the disease has advanced far, success cannot be expected.

The treatment of carcinoma by means of electricity possesses advantages over other methods. 1. The facility with which electricity is applied; some methods can be carried out without an assistant and without an anesthetic. 2. The operations are free from danger. 3. There is no shock after the operation. 4. It is easier to get at the entire disease in an early stage than by any other means. 5. It can be used in places anatomically dangerous and beyond the reach of the knife, and the horror of the knife is avoided. 6. It retards the growth, prolongs life, and benefits the

patient, even if it does not always cure. 7. The patient is not necessarily confined to bed or house. 8. The operation does not cause pyemia or septicemia. 9. There is no danger of hemorrhage, but hemorrhage is controlled. 10. There is more chance of a cure and better healing after the operation. 11. It always allays pain.

DR. HUTCHINSON related that he had operated on sixteen cases, of which two are still living. One was a case of epithelioma of the lower lip removed fourteen years ago. There has been no return and the patient is in good health. The other was in a woman from whom a breast and the two labia majora were removed; after twelve years she is in good health.

Dr. Hutchinson was firm in the belief that carcinoma is curable by galvanism.

DR. MASSEY stated that he had used a method different from any mentioned. It consisted in the application of the carbon positive pole of a strong current directly to a limited surface of the diseased tissue. In that way, the parts being free from excessive sensation, the ready destruction of the carcinomatous tissue is accomplished, with immediate cessation of the bleeding that annoys the patient. Dr. Massey had in one application, with less than one hundred milliamperes, arrested a hemorrhage that had lasted a year, and the hemorrhages have not recurred. The carcinomatous tissue subsequently comes away under the influence of antiseptic douches in white crumbs, and leaves a clear, hard excavation.

DR. WILLIAM F. HUTCHINSON, of Providence, read a paper entitled, "What a General Practitioner Can Do with Electricity," in which he cautioned against prettily finished boxes, the contents of which are sealed, upon which repairs can only be made by the maker. He advised that no form of galvanic cell be bought unless every part may be easily inspected, readily understood, and quickly repairable without expert aid. He believed that some form of Grenet cell is the best that a general practitioner can find for portable use. For office work, where great life with small trouble is required, he has not found anything to equal the new Edison cell, catalogued as "Type C." It will give exactly the same voltage—about seven-tenths volt per cell—during its entire life, about a year of ordinary service.

For faradic machines, he recommended a Du Bois-Reymond coil with two Grenet cells in the box. One of these will be sufficient for ordinary use, but in asphyxia from gas-inhalation, in drowning cases, and especially in opium-narcosis, when it may be necessary to prolong the treatment for hours, a second cell is called for. Perhaps the best faradic machines in America are made by Fleming, of Philadelphia.

Among the diseases that Dr. Hutchinson thinks may be successfully treated by the general practitioner are functional derangements of special sense, and such forms of their paralysis as are dependent upon excentric causes; certain forms of dyspepsia dependent upon atony of the stomach-nerves; sexual neurasthenia and impotence springing therefrom; peripheral neuralgias and such other neuralgias as are confined to long nerve-trunks; herpes zoster; muscular rheumatism; neuralgic dysmenorrhea, and parametritis.

DR. M. J. GRIER, of Philadelphia, read a paper on "The Treatment of Some Forms of Sexual Debility by Electricity," in which he said that of the incidental

inquiries presented to the physician, many of them will refer to the derangements of the sexual functions. The individuals usually seek relief from a neuralgia, pain in the back, muscular debility, or some other cause leading easily and naturally from the ostensible to the real object of the visit. This is generally the case with the younger subjects who have become conscious of an appreciable physical failure, or who, from the presence of some slight subjective symptoms, are apprehensive that such failure will certainly occur. Another class will seek relief from conditions fully developed and are at once freely communicative. Both classes have morbid ideas as well as erroneous opinions concerning their condition, which add difficulty to their management. Some of them have already been under treatment; the family physician has been consulted, and iron, strychnine, and electricity have been continuously administered, but without the desired result. The larger number of such cases present a state of local and general debility resulting from excessive and long-continued stimulation of special nerve-endings, with consequent exhaustion of the spinal and cerebral centers controlling the parts involved.

The neurasthenic condition of the patient will probably and justly demand the earliest attention. Whether it be the cause or the effect of the sexual debility, the progress and results of the local treatment will be much more decided as this state disappears. In one class, and a large one, there will be found to be a lowered functional activity of the entire nervous system, depending on preceding mental depression caused by the gradually developing consciousness of the diminution of the virile power and the fear of its complete abolition. In another class, of more mature years, there are varying degrees of debility, ranging from actual impairment of function to complete loss of power.

In addition to the value of properly directed medication, aided materially by the change in the morale of the patient, as the physician succeeds in inspiring him with the hope of relief by demonstrating to him its possibility by the results of treatment, electricity is a potent factor in his restoration. Independently of the special character of the neurasthenia, beyond the recognition of the sexual disturbances, galvanism to the head and spine may be at once employed. Central galvanization, with its catalytic and alterative effects, will perhaps best meet the indications; the method may be varied to suit each particular case, but, as a rule, the effort will be to bring the central and spinal centers under its special influence by either increasing or diminishing their irritability. In the application to the head, the vertex is well moistened and a two-inch electrode firmly applied. The vertex is selected because the current is well borne at that point, there is less vertigo or other apparent cerebral disturbance. To diminish cerebral irritability the positive pole should be applied, as its effect appears to be the more sedative. The negative electrode is a slightly convex button, two inches in diameter.

Pure tin plates of about No. 28 gauge are preferable for electrodes, as they are soft and are easily moulded to any curved surface and are always bright and fresh-looking; these are covered with ordinary muslin, such as cotton shirting. Perhaps equally important is the greater uniformity in the relation of the electrode to the

skin, as to distance; it never varies $\frac{1}{100}$ of an inch, keeping the current-intensity quite regular; while with the sponge the ever-varying distance and pressure may be quite enough to convert an intended stable into a labile application. Having adjusted the positive plate to the vertex, the negative is placed subaurally on either side; beginning with a minimum amount of current, say about two milliamperes, and a uniform pressure, the negative electrode is slowly moved down over the region of the cervical sympathetic nerves until the first dorsal vertebra is reached, when the current-strength may be gradually raised to five milliamperes; the electrode is then passed slowly down on each side of the upper spine. This current-strength should be maintained, as the increased resistance of more tissue is brought into the circuit. As a rule, the electrode need not pass below the dorsal vertebrae, depending on the kathelectrotonic state induced below that point, and reserving the special lumbar and sacral centers for subsequent treatment. Carefully avoiding any abrupt change of application and pressure, the positive may now be placed over the inferior cervical ganglion on either side and the negative traced over the course of each dorsal nerve, thus gently influencing the sympathetic ganglia.

It is probable that in a labile application of the current, the movement of the kathode over the tissues is equivalent to an opening and closing of the circuit, as each cell is successively subjected to its influence, and thus there is induced a momentary contraction or tonic state of the vascular muscles, resulting in improvement of circulation and nutrition. Perhaps, also, the electrical actions upon trophic-nerve tissues may produce changes in other tissues and organs of the body, organic metamorphoses, modifications of nutrition, which constitute a part of the "catalytic effects."

After a number of applications the general result of the treatment is apparent in the disappearance of the sallowness and nervous depression, and in a better cutaneous circulation, as shown by the improvement in the complexion, and in more refreshing sleep; there is also an improvement in the digestive functions, and a general feeling of buoyancy. In this way is afforded a better foundation on which to institute treatment of the local disturbances.

The loss of the erectile power is the most prominent of the local symptoms and is that which naturally impresses the patient most forcibly, and more than any other impels him to seek professional aid; to him it is but a single fact; to his physician it is evidence of the derangement of a complicated system of parts and functions, both local and general.

Such cases are found associated with long-continued continence and in men of excessive mental application, in whom the cerebral activity has been expended in other directions; also in those who have become sexually morbid, having lost the normal physical reflexes through exhaustion. They usually retain the physical reflexes and respond to stimulation of the local sensory nerves, thus proving that the spinal paths of the afferent nerves have not been impaired, or at least not to a very great extent.

In such cases the indications are to stimulate the *nervi erigentes* and the upper centers acting in conjunction with them. An ascending galvanic current of

about five milliamperes may be passed from the perineum, from over the third and fourth sacral nerves, where the vaso-dilator branches arise, and from the genito-spinal center of Budge, at the fourth lumbar vertebra, successively; the negative electrode should be carefully applied to the back and sides of the neck and to the vertex, in an endeavor to increase the excitability of the cortex in those in whom it is depressed, and to quicken the responses of the lower spinal centers to their impress.

Under ordinary conditions the vasomotor nerves are in a state of moderate excitation. If, from irritation of the vasomotor centers, the vasomotors are over-excited, and a controlling influence is exercised over the vessels supplying the erectile tissues, through their dominant control over the vaso-dilators, the engorgement of the sinuses of the cavernous bodies will be prevented and erection will be impossible. Such a condition is present as a result of excessive sexual stimulation, and is most probably dependent upon the irritation that precedes exhaustion of the centers. The excessive tone is shown in the diminished blood-supply to and the lowered temperature of the pale and shrunken organ. In persistent overaction of these nerves, the lessened blood-supply to the secretory organs is shown by the diminished quantity of their secretions and the consequent loss of this source of stimulation. In such cases, galvanism applied to the vertex and upper spine, as in neurasthenia, will diminish the upper central irritability, and good results will follow stable applications to the lumbar region with a current of five or six milliamperes through a positive four by four inch plate, one of equal size being placed at some indifferent point on the lower portion of the thigh. The best results are produced by placing a moistened electrode about one and one-fourth inches square against the perineum—this should be the positive pole; the negative may be a plate of three inches square, applied continuously to the sacro-lumbar junction; the cords should be connected with the terminals of the primary coil. The application is begun with the minimum strength, which is gradually increased as much as the patient can comfortably bear, and is maintained for from ten to fifteen minutes. In some cases, usually in those who are less nervous and irritable, the effects are noticed at the time of the application; others may not notice a change for half an hour or longer after the treatment. In those in whom the sensory nerves are not very much impaired, the first impression may be a sense of tingling along the dorsal nerve of the penis, or it may be distributed over the inner surfaces of the thighs, through branches of the internal cutaneous nerves, often reaching to the knees. In a little time a warm, glowing sensation will be felt, mostly in the sacro-lumbar and gluteal regions; this being obtained, the application should cease. This effect may last for from a few minutes to several hours, and will be alluded to by the patient at a subsequent visit as causing a feeling of comfort and pleasure. The ultimate result is a restoration of the normal circulation and an improvement in the nutrition of the parts, with increased local muscular power.

The opposite condition of vasomotor relaxation is frequently encountered—an exhaustion following the state of irritability just described. When affecting the

centers controlling the genital organs, the result will be a passive engorgement with a flaccid elongation; the temperature may be normal or lowered, depending on the sluggishness of circulation; the muscles are undernourished and voluntary control of them is lessened; in many cases the secretion of the coronal glands is unpleasantly augmented. In the erectile effort, the vasodilators may be sufficiently active to enlarge the cavernous sinuses and increase the flow of blood thereto; but the weakened muscles fail to sufficiently retard the return of blood from them, and the result is a moderate increase of bulk, with a soft glans and an easily compressible body. As the nerves cannot be influenced by direct contact, the application of galvanism to those parts which anatomy and experience teach us are the most available, and through which reflex effects can be obtained, must be depended upon. An efficient method consists in the introduction within the urethra of an uninsulated metallic sound connected with the negative pole; the current of galvanism should not be over two or three milliamperes, and should be slowly broken, say about twice each second, for not over two minutes; the contact should last only during the instant of making, occasioning a short interval of excitation and a longer one of rest. The improvement from repeated applications will be shown by the retraction of the organ to a normal size. The immediate effect of the application is due both to muscular stimulation and increased arterial contraction, but mostly to the latter. Two other methods may be employed to produce this stimulation. In one, galvanism is applied to the surface of the inner side of the upper third of each thigh, with a bare negative electrode, kept slowly moving, and using a current-strength only sufficient to develop a pungent irritation of the sensory nerves; to use more would be to overtax and exhaust the vasomotor nerves still further. The bare negative electrode of the inductive coil may also be used over the same region and for the same purpose. The vibrations should be slow enough to give perceptibly distinct shocks. In therapeutic applications the positive pole may be placed at any indifferent part, since the effect desired is the reflex action produced by the irritation of the negative pole.

Dilatation and turgescence of the sinuses of the corpora having occurred, it can be readily seen how a partial or complete failure of these muscles to act will impair or prevent erection. In their sexual activity, these muscles, while partly under volitional control, are mainly excited by reflexes, and in health very readily become equally active under the reflexes resulting from stimulation of the sensory nerves of the penis and adjacent parts. These muscles respond to the faradic and galvanic currents, according to their degree of health or exhaustion, and tests thus made may assist in the diagnosis of their condition. A suitable electrode, insulated where it comes in contact with the anal margin, may be introduced in the rectum and pressed against the anterior wall; a small, flat electrode, connected with the negative pole of the extra current should be applied to the perineum, and the current gradually increased in strength until muscular action is produced, which in health is quite strong. If the muscles fail to respond, or respond but feebly, the galvanic current may be substituted, maintaining the same polarity,

making slow interruptions, with a feeble current, gradually increasing both the strength of current and rapidity of interruption. This proceeding answers very well for the direct treatment of these muscles. Decided contractions of the accelerator and compressor urethrae muscles may be obtained by substituting for the perineal electrode an uninsulated metallic urethral sound and using an uninterrupted galvanic current.

These muscles being supplied by the muscular branches of the pudic nerve, they may be indirectly stimulated by placing a positive plate-electrode over the sacrum, the rectal electrode becoming the negative and remaining as before; using, if the muscles are very feeble, a short constant current of not over two milliamperes, supplemented by twenty or thirty interruptions, occupying about one minute. A weak muscle of this class requires a longer duration of current-action and short intervals of rest, if the current be of not more than the strength stated; vigorous treatment only seems to exhaust the already enfeebled parts. The rectal electrode may now be changed for a small perineal plate, and stimulation of the perineum and root of the penis may be made with a bearable strength of the extra current, slowly interrupted. This will produce both muscular and reflex effects.

Conjoined with defective muscular action, there is usually a lowered sensibility of the genital cutaneous and special sensory nerves, caused by the exhaustion following excessive stimulation. This will be found most marked about the prepuce and the glans, more particularly around the corona and the papilla beneath the meatus; also, if the anesthesia be profound, in the frænum præputialis. The cremaster reflex is sometimes diminished and may be abolished. Such cases may have a decided cerebral sexual activity with physical failure; or there may be a moderate erectile power, with loss of sexual pleasure and a retarded or incomplete orgasm. Sensibility of the surface may appear quite decided under electric tests, and the tactile sensibility be much enfeebled or lost, lessening the value of electro-diagnosis, excepting as to the condition of the muscles. As the local nutrition is usually impaired, resulting in relaxation of tissue and lowered temperature, both indications are met by the use of the galvanic current applied to the sensory parts most affected, by means of a small bare electrode, placing a medium-sized positive plate over the sacrum to include the origin of the pudic nerve, from which is given off the dorsal nerve of the penis. In treating the lowered sensibility of such nerves, the best results are obtained from a very mild current in this manner, and continued only long enough to produce a blush and a slight pungent sensation at the negative pole.

In the earlier changes of nerve excitability, one often finds an extremely sensitive condition, a hyperesthesia, in which even contact of the ordinary clothing with the surfaces will suffice to produce erotic excitement; preputial and rectal irritation, as well as other local causes, may also originate it. In many cases such irritation leads to direct stimulation of the genitals by touch, which, continued to excess, is a potent factor in producing abnormal excitability and consequent exhaustion of these nerve-centers. It is also a frequent cause of premature emission. Having removed or corrected the exciting

local causes, galvanism will aid in removing the central irritability. For its sedative action the anode is applied over the sacrum, a stable current of not over five milliamperes being used; the negative pole should be placed over some indifferent point, preferably to the lower limbs. It is essential to have a very mild current, free from any variation of strength, and to maintain the sacral pole evenly at one position and for a longer time than has been advised in other applications. Having thus treated the centers, the excitability of the nerve-terminals may be diminished by enveloping the penis in a soft metallic plate, thinly lined with moist absorbent cotton, to fill up irregularities and to make more uniform contact. This plate should be the anode; the kathode may rest on the abdomen. A mild, steady current through a sensory nerve for ten or fifteen minutes, traversing it in the normal nerve-current direction, will lower the excitability of the nerve. Urethral irritability is a most frequent cause of morbid action of the genital centers, and gives rise to various degrees of nerve irritation or sedation. Premature and painful emission may also be traced to congestion and irritation of the verumontanum. Similar impairment of functional activity may result reflexly from continued irritability of the mucous membrane of the urethra and ejaculatory ducts. An anodal application of a bare metallic sound, with a current of not more than one milliamperé, and a kathodal plate over the lumbar vertebrae, will diminish the excessive irritability of this membrane.

(To be continued.)

CORRESPONDENCE.

CHICAGO.

The Provident Hospital and Training-school—What Constitutes Unprofessional or Dishonorable Conduct?—The Insane of Iowa.

THE Provident Hospital and Training-school, the new institution which was founded here January 23, 1891, and dedicated to the public use May 4th, is in a flourishing condition. More than one hundred patients have been treated since the hospital was opened, and a number of nurses are being instructed in the best methods of caring for the sick and injured.

The organization of the hospital was due to the necessity of increased hospital facilities, and the undertaking has been successfully carried out. Indeed, the authorities of the institution are already talking of enlarging their quarters by securing the nine-room building in the rear of the hospital and turning it into a training-school for the nurses. This will doubtless be done as soon as sufficient funds can be collected, for the hospital relies for its support on the philanthropical. It treats patients who are unable to pay free of charge; those who can afford to do so make some return to the institution.

The medical staff is composed of Drs. R. N. Isham, and D. H. Williams, surgeons; Drs. Frank Billings, and Stanley M. Black, physicians; Drs. Henry T. Byford and A. A. Wesley, gynecologists; Dr. W. W. Jaggard, obstetrician; Dr. Horace M. Starkey, oculist and aurist.

The Secretaries of the State Board of Health of Nebraska have written to Attorney-General Hastings,

asking what constitutes unprofessional or dishonorable conduct such as would authorize the Board of Secretaries to refuse to issue a certificate to a person applying therefor. The Attorney-General in his reply says:

"Section 14 of chapter 35 of the session laws of 1891, page 285, provides as follows: 'The board may refuse certificates to persons guilty of unprofessional or dishonorable conduct, and it may revoke certificates for like cause: Provided, always, that it has given the person an opportunity to be heard in his or her defence.'

"What is unprofessional or dishonorable conduct on the part of a practitioner of medicine is a question in which the courts appear to be wide apart. The section above quoted is a copy of the Illinois and Minnesota law upon the same subject. The code of ethics as laid down by medical associations furnishes us but little guidance concerning this question.

"To a greater or less degree each case of unprofessional or dishonorable conduct must be addressed to the sound judgment of the Board. No two cases will be quite similar in character. I therefore conclude, that the Legislature meant by unprofessional or dishonorable conduct such conduct as was dishonorable and calculated to mislead or deceive—such practice, in short, as should not be indulged in by honorable men of any profession or calling."

Some of the figures from the recent report of the committee to visit the insane asylums of Iowa were recently published. Although there are three State insane asylums, located at Independence, Mount Pleasant, and Clarinda, beside the insane being cared for at nearly all the county poor-farms, the committee finds that insanity is on the increase to such an extent that it will be necessary, in order to properly look after the patients, to have another State institution, and recommends that such be erected.

PROGRESS IN THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

To the Editor of THE MEDICAL NEWS,

SIR: As an item of medical news that will be of interest to many of the readers of your journal, allow me to mention the great improvements now being made in the facilities for teaching in the Medical College of the State of South Carolina. Prominent among the colleges of ante-bellum times, she graduated many men of distinction, but the impoverishment of the South resulting from the war depressed the College for many years, and it was only through the devotion of her professors, who gave both time and talent without charge, that her doors were kept open to the youth of our own and adjoining States. As a matter of fact, however, despite these discouraging incidents, and, also, notwithstanding a want of coöperation on the part of many of her sister colleges, this school has consistently and persistently striven for a higher standard of medical education.

At the opening of the post-session it was determined to no longer wait for organized movement, but to at once take the initiative in this important matter and demand of matriculants three full sessions, with graded courses of instruction. Consequent upon this increased time for study came the demand for increased facilities, and this has been met by the addition to the College of

a large annex, in which are located a most perfectly equipped chemical laboratory, and model bacteriological and pathological departments, thoroughly fitted out by the "Alumni Association of the Medical College of the State of South Carolina," wherein students will find every facility for acquiring an intimate knowledge of these important branches. The best instruments and accessories of German manufacture have been adopted. Thus has this honored old school accomplished her cherished desire, and feels that she is second to none other in those facilities that go so far to graduate accomplished physicians.

Her faculty feels justly gratified at the promising outlook for the future of her usefulness, and is sure that this will give pleasure to all her friends.

Very sincerely yours,

"MEDICUS."

**CORRECTED ILLUSTRATION OF WEAGLY'S
SELF-RETAINING PALATE RETRACTOR.**

To the Editor of THE MEDICAL NEWS,

SIR: I enclose a corrected illustration of my retractor, in order that your readers may have a proper idea of the device. It will be remembered that no proof of the former illustration in THE MEDICAL NEWS of September 5, 1891, was sent to me by my instrument-maker, and hence the error. I would add that it is im-



portant to have the clamps or loops constructed of very light flexible wire, in order to permit of any desired change in curvature. The accompanying illustration gives a false idea that the material used in the nasal attachment is too heavy. Regretting the trouble caused you, I am, sir, etc.,

T. H. WEAGLY.

MARION, PA.

A CORRECTION.¹

To the Editor of THE MEDICAL NEWS,

SIR: Will you allow me to correct a report of my remarks on the paper of Dr. Rockwell concerning electricity in extra-uterine pregnancy? While I believe that faradism will "destroy the integument," I did not say so. I said that it would destroy the *embryo*. Medical faradic coils as ordinarily constructed will not destroy the skin, but currents from dynamos will. My belief as to the utility of faradism is based not alone on the results of treatment in the instances named, but on experiment with the products of conception obtained in cases of abortion in the specimens which have occurred in my own practice and in those sent me by friends.

¹ To avoid misunderstanding we would say that the Report of the American Electro-therapeutic Association as published by THE NEWS is furnished by the official stenographer of the Association.—Editor of THE NEWS.

Microscopic examination in these instances shows that the mass is so disrupted by powerful faradic currents as to undoubtedly prevent further growth. The embryo thus treated is pulvified, so to speak.

The remarks of Dr. Morton appear to be incorrectly reported also. I do not think that he believes the primary faradic current to be "alternating;" it is direct and interrupted. The secondary, as found in ordinary medical coils is alternating, but it may be made direct (though interrupted) by "zig-zags" or commutators.

Sincerely yours,

WM. R. D. BLACKWOOD.

246 NORTH TWENTIETH STREET,
PHILADELPHIA, October 17, 1891.

REVIEW.

SURGICAL BACTERIOLOGY. By N. SENN, M.D., Ph.D., Professor of Surgery in Rush Medical College, Chicago, and in the Chicago Polyclinic; Attending Surgeon to the Milwaukee Hospital; Consulting Surgeon to the Milwaukee County Hospital and to the Milwaukee County Insane Asylum, etc. Second edition, thoroughly revised. Pp. 271, with thirteen plates. Philadelphia: Lea Brothers & Co., 1891.

THIS volume is rich in material valuable to the surgeon. The advance in surgical bacteriology has been so rapid that nothing written on the subject is likely to have value unless it is recent. For this reason the material for this work has been largely obtained from current literature, and the aim has been to give the results of the best work of the ablest men. There are, therefore, given conflicting opinions, credited to authority, without attempt at harmonizing them; but in many cases the author has also stated his own convictions. The second edition represents a thorough revision of the first, with many additions that bring the work to date.

There is stated to be "substantial proof that in some infectious diseases heredity is traceable to direct transmission of the specific microbes floating in the circulation of the mother to the fetus, through the thin wall which separates the maternal from the fetal blood."

The existence of pathogenic microbes in the healthy body is spoken of as "probable." These may apparently remain inactive until a trauma or some pathological product supplies a convenient field for their growth. When the skin is intact the suppuration of a tumor or hyperplastic lymphatic gland is accounted for by abnormal vascular conditions that have served to arrest floating microbes.

The various microbic diseases that are met in surgical practice, such as tetanus and erysipelas, are in turn considered. An interesting chapter is that devoted to "Clinical Forms of Surgical Tuberculosis." The disease described by Rosenbach, under the name of erysipeloid, is also noticed. Quite justly the microbic origin of tumors is considered still unproved. The author narrates an experiment of his own in transplanting carcinomatous tissue from an infected to a healthy locality in the human subject. The graft united, but was afterward completely absorbed. The same result was obtained in his twenty-four experiments on animals. The following is his concluding opinion: "There has been, so far, no

proof furnished of the existence of a specific bacillus in carcinoma or sarcoma, and the inoculation and implantation experiments have proved so seldom successful, and the experiments which at first appeared successful have later been shown to be so deceptive, that the microbic origin of malignant tumors has not only not been established, but rendered improbable."

The book represents a great deal of labor in summarizing the work of others, particularly of German and French investigators. Indeed, this is one of its chief recommendations, as the reader has an opportunity to arrive at the best opinion with but little labor. Abundant references are conveniently incorporated in the text.

NEWS ITEMS.

Annales d'Oculistique.—This long-established and widely known ophthalmological journal, conducted during many years with distinguished ability by the late Professor Warlomont, has, since the death of that illustrious leader in ophthalmology, passed into the editorial hands of Drs. Valude and Sulzer, who have transferred the office of publication from Brussels to Paris.

The new management has doubled the size of the journal and promises to increase its usefulness.

Dr. George T. Stevens, of New York, the American collaborator, will report matters of ophthalmological interest from the United States.

Those who are familiar with *Annales d'Oculistique* will marked already have observed in the last two numbers a change in the prominence given to American literature.

The Philadelphia Polyclinic has issued its Ninth Annual Announcement, a survey of which affords an indication of the substantial progress that this institution has made in the comparatively few years of its existence. With a strong corps of teachers in the various general and special departments of medicine, selected from the best active men in the local profession, and with a commodious building, liberally equipped and specially adapted to its purposes, the Polyclinic has already become an important factor in medical education, and gives promise of increasing that importance.

The Southern Surgical and Gynecological Association will hold its annual session at Richmond, Va., November 10, 11, and 12, 1891. An interesting scientific program has been provided for. Dr. L. S. McMurtry, of Louisville, is the President; Dr. W. E. B. Davis, of Birmingham, Ala., Secretary; and Dr. Hunter McGuire, of Richmond, Chairman of the Committee of Arrangements. Members of the medical profession are cordially invited to the meeting.

Cremation.—Cremation is coming more and more into favor in Germany. In addition to the crematorium which has been in operation at Gotha since 1877, and where from five to six hundred bodies are cremated annually, and another which was recently established at Hamburg, a new one was recently consecrated at Ohlsdorf, and another at Carlsruhe.

Contributions to Mechanico-Therapeutics and Orthopedics is the name of a new publication to be devoted to the

objects indicated by its title, under the editorship of Dr. L. Wischnewetzky. The first number contains, in addition to an editorial preface, a monograph on The Mechanico-Therapeutic Institute, by Dr. Gustaf Zander, of Stockholm.

American Orthopedic Association.—The following officers were elected for the ensuing year: President, Dr. Benjamin Lee, of Philadelphia; Vice-Presidents, Dr. R. H. Sayre and Dr. H. L. Taylor, of New York; Corresponding Secretary, Dr. Royal Whitman, of New York; Secretary and Treasurer, Dr. John Ridlon, of New York.

Latent Tuberculosis.—A prize of three thousand francs (\$600) has been offered for the best essay on the subject of "Latent Tuberculosis," to be presented to the next Congress of Tuberculosis, which will probably meet in 1893.

A Pasteur Institute in Cochinchina.—A Pasteur Institute was opened at Saigon on June 1st, under the auspices of the French Government. Though primarily intended for the practice of anti-rabic inoculation, the work of the institute will extend over the whole field of microbiology.

A Bacteriological Institute is to be established at St. Petersburg, in accordance with a decree of the Czar, who has allocated a considerable sum for the purpose. Dr. Gabrylowicz, of Vienna, is to be the director.

Dr. Alphons von Rosthorn, of Vienna, has been appointed temporary Director of the Obstetric and Gynecologic Clinic of the University of Prague, *vice* Schauta, elected to succeed Braun at Vienna.

The Editorial Committee of the University Medical Magazine, Drs. G. E. de Schweinitz and Edward Martin, resigned on the first of October, and in their places were elected Drs. J. Howe Adams and A. C. Wood.

Death from Epsom Salts.—The *British Medical Journal* reports the case of a woman who, feeling ill, took four ounces of Epsom salts at a single dose and in an hour was dead.

Dr. Woods Hutchinson, of Des Moines, Iowa, editor of the *Vis Medicatrix*, has been elected Professor of Anatomy in the Iowa State University.

Professor Franz Exner has been elected to fill the chair of Physics at the University of Vienna, to succeed Goldschmidt, who retires, seventy years old.

Professor Moos has been elected Ordinary Honorary Professor in the Medical Faculty of the University of Heidelberg.

Professor Rubner, of Marburg, has succeeded Professor Koch in the chair of Hygiene at Berlin.

Dr. Ogner has been elected Professor Extraordinary of Comparative Anatomy at the University of Moscow.

Professor August Gartner, of Jena, has accepted the chair of Hygiene at Marburg.

Dr. John M. Keating has taken up the practice of medicine at Colorado Springs, devoting himself to the treatment of the diseases of women and children.

BOOKS AND PAMPHLETS RECEIVED.

Ministering Women. The Story of the Royal National Pension Fund for Nurses. By George W. Potter, M.D. London: "The Hospital," Limited, 1891.

Diseases and Refraction of the Eye. By N. C. Macnamara, F.R.C.S., and Gustavus Hartridge, F.R.C.S. Fifth Edition. Philadelphia: P. Blakiston, Son & Co., 1891.

The Refraction of the Eye. A Manual for Students. By Gustavus Hartridge, F.R.C.S. Philadelphia: P. Blakiston, Son & Co., 1891.

Addresses, Papers, and Discussions in the Section of Surgery and Anatomy at the Forty-second Annual Meeting of the American Medical Association, at Washington, D. C., May 5-8, 1891. Chicago: 1891.

Post-graduate Course of Lectures, Medical Faculty, University of Toronto. Delivered December 16, 18, and 19, 1890. Toronto: The J. E. Bryant Company (Limited), 1891. Reprint.

Burdett's "Hospital" Annual and Year-book of Philanthropy, 1891-92. Edited by Henry C. Burdett. London: "The Hospital" (Limited), 140 Strand, W. C.

Vol. XXV. Transactions of the State Medical Society of Wisconsin, for the Year 1891. Constitution, By-laws, and List of Members. Madison, Wis.: Tracy, Gibbs & Co., 1891.

Announcement for 1891-92 of the College of Medicine of the National Normal University of Lebanon, Ohio. Reprint.

A Case of Disseminated Sclerosis, Presenting the Clinical Aspect of Primary Spastic Paraplegia, with Atrophy of Both Optic Nerves. By Charles Zimmerman, M.D., of Milwaukee, Wis. Reprint, 1891.

Prodromal and Early Symptoms of Bright's Disease. By Charles F. Withington, M.D., of Roxbury. Reprint, 1891.

The Eye-symptoms of Brain Disease. By Charles Zimmerman, M.D., of Milwaukee, Wis. Reprint, 1891.

Which is Scientific Medicine? By M. W. Van Denburg, A.M., M.D., of Fort Edward, N. Y. October, 1891. Reprint.

Common Sense in Medicine. By S. C. Gordon, M.D., of Portland, Me. Boston, 1891. Reprint.

Surgical and Mechanical Treatment of the Deformities Following Infantile Spinal Paralysis. By De Forest Willard, M.D., Ph.D. Reprint, 1891.

Two Cases of Removal of Laminae for Spinal Fracture. By De Forest Willard, M.D. Reprint, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 13 TO OCTOBER 19, 1891.

APPEL, DANIEL M., Captain and Assistant Surgeon.—Is granted leave of absence for one month, to take effect about the 6th proximo.

By direction of the President, **ARTHUR W. TAYLOR, Captain and Assistant Surgeon,** will report in person to Colonel John Mendenhall, Second Artillery, President of the Army Retiring Board, at Fort Adams, R. I., for examination by the Board.

BEALL, GEORGE T., Captain and Medical Storekeeper.—Is granted leave of absence for one month. During the absence of Captain Beall, Charles B. Ewing, Assistant Surgeon and Attending Surgeon at St. Louis, Mo., will take charge of the Medical Purveying Department in that city.

GANDY, CHARLES M., Captain and Assistant Surgeon.—Is relieved from duty with the Army Medical Board, to take effect on its final adjournment, and ordered to Fort Yellowstone, Wyoming Territory.

SUTER, WILLIAM N., First Lieutenant and Assistant Surgeon.—Is relieved from duty at Fort McKinney, Wyoming Territory, and ordered to Fort Grant, Arizona Territory, for duty.

MCVAY, HARLAN E., First Lieutenant and Assistant Surgeon.—Is relieved from duty at Fort Mackinaw, Michigan, and ordered to Fort Wingate, New Mexico.

GLENNAN, JAMES D., First Lieutenant and Assistant Surgeon.—Is relieved from duty at Fort Riley, Kansas, and ordered to Camp Oklahoma, Oklahoma Territory.

IRELAND, MERRITT W., First Lieutenant and Assistant Surgeon.—Is relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Riley, Kansas.

BENHAM, ROBERT B., Captain and Assistant Surgeon.—Is relieved from duty at Fort Hamilton, New York, and ordered to Mount Vernon Barracks, Alabama, for duty.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 17, 1891.

MAGRUDER, A. F., Surgeon.—Ordered to the "Boston." **DIXON, W. S., Surgeon.**—Detached from the "Boston," and granted leave for two months.

MARSTELLER, E. H., Passed Assistant Surgeon.—Ordered to special duty at Baltimore, Md.

DRAKE, N. H., Passed Assistant Surgeon.—Detached from the "Albatross," and granted leave for two months.

WIEBER, F. W. F., Passed Assistant Surgeon.—Detached from the "Pensacola," and ordered to the "Albatross."

BRADLEY, GEORGE P., Surgeon.—Detached from Naval Hospital, Chelsea, Mass., and ordered to the Receiving-ship "Wabash."

BRAITHWAIT, F. G., Assistant Surgeon.—Detached from the "Wabash," and ordered to Naval Hospital, Chelsea, Mass.

BEYER, H. G., Passed Assistant Surgeon.—Ordered to Naval Academy, Annapolis, Md.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING OCTOBER 19, 1891.

VANSANT, JOHN, Surgeon.—Granted leave of absence for twenty-three days, October 8, 1891.

LONG, W. H., Surgeon.—Granted leave of absence for thirty days, October 7, 1891.

HAMILTON, J. B., Surgeon.—To represent the Service at the meeting of the Mississippi Valley Medical Association. October 2, 1891.

GASSAWAY, J. M., Surgeon.—Leave of absence extended for five days, September 28, 1891.

WHEELER, W. A., Passed Assistant Surgeon.—Granted leave of absence for thirty days, October 7, 1891.

PECKHAM, C. T., Passed Assistant Surgeon.—To represent the Service at the meeting of the Mississippi Valley Medical Association, October 2, 1891.

BRATTON, W. D., Passed Assistant Surgeon.—Granted leave of absence for thirty days, October 7, 1891.

PETTUS, W. J., Passed Assistant Surgeon.—To proceed to Norfolk, Va., for temporary duty, October 2, 1891.

MAGRUDER, G. M., Passed Assistant Surgeon.—Granted leave of absence for twenty days, October 7, 1891.

WOODWARD, R. M., Passed Assistant Surgeon.—Granted leave of absence for thirty days, October 6, 1891.

VAUGHAN, G. T., Assistant Surgeon.—Granted leave of absence for thirty days, October 6, 1891.

COBB, J. O., Assistant Surgeon.—To proceed to Buffalo, N. Y., for temporary duty, October 7, 1891.

GUIERAS, G. M., Assistant Surgeon.—To proceed to Mobile, Ala., Pensacola, and Mullet Key, Fla., on special duty, October 10, 1891.

BROWN, B. W., Assistant Surgeon.—To report to the medical officer in command, San Francisco, Cal., for duty, October 3, 1891.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment, provided that the request for reprints be noted by the author at the top of the manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

Address the Editor: **GEO. M. GOULD, M.D.,**
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